APPENDIX

Appendix A Streetlight Data Traffic Counts

Padlo, Pat

From: Bergeron, Anna
Sent: Tuesday, December 15, 2020 11:00 AM
To: Padlo, Pat
Cc: Zimyeski, Melanie S
Subject: Fw: Route 229 Corridor Study – TMC for your review and approval
Attachments: Route 229 Diagram 3.1.Final[2].pdf; Route 229 Diagram 3.2.Final[1].pdf; Route 229 Figure 3.3[1].pdf; Route 229 Figure 3.4.pdf

Good morning Pat,

Please see attached. If you have any questions, please let me know.

Thank you,

Anna Bergeron
Transportation Planner II
Intermodal Planning
Connecticut Department of Transportation

****Currently Teleworking-please contact me via email****

From: Sojka, Gary J
Sent: Tuesday, December 15, 2020 10:32 AM
To: Bergeron, Anna <Anna.Bergeron@ct.gov>
Cc: Elder, David C ; Zimyeski, Melanie S ; Jacobson, Richard C ; Hiller, Todd Patel, Dhruval H.
Subject: FW: Route 229 Corridor Study – TMC for your review and approval

Anna,

Please forward the updated traffic flow diagrams to BL Companies. The volumes shown in RED indicate where the volumes need to be adjusted based on information we had available within the corridor.

Thank you,

Gary J. Sojka
Transportation Supervising Planner
Connecticut Department of Transportation
Bureau of Policy and Planning
2800 Berlin Turnpike
Newington, CT 06111

From: "Padlo, Pat" <
Date: Friday, November 20, 2020 at 5:04 PM

To: "Bergeron, Anna" , "Sojka, Gary J" , "Zimyeski, Melanie S"

Cc: "Dion, Michael" , Christian Meyer
Subject: Route 229 Corridor Study – TMC for your review and approval

EXTERNAL EMAIL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Hello,

BL companies is performing a CT Route 229 corridor study that extends from i-84 WB ramps in the town of Southington to US6/Farmington Ave in the city of Bristol. From our client, NVCOG, we have received TMC streetlight data along the mentioned corridor. Using the provided information, TMC counts from studies in the corridor, and CTDOT ATR counts we have developed a balanced AM, MD, and PM peak hour count profile for your approval.
We would like to request your review and approval of the provided information so we can enter the traffic into our synchro model. Our goal is to develop existing, no build and future conditions.
For your reference we have included excel with raw and adjusted counts along the corridor. Please let us know if you have any questions.

Regards, Pat

Pat Padlo, P.E., PTOE
Project Manager
BL Companies | *Employee owned. Client driven.*

Architecture
Engineering
Environmental
Land Surveying
Companies

355 Research Parkway, Meriden, CT 06450
tel: **203.630.1406** | direct: 203.608.2588
mobile: 203.623.6881 | fax: 203.630.2615
www.blcompanies.com

AM,(MD),[PM]

2: AM 7-8 (7am-8am),2: Mid Day 12-1 (12noon-1pm),5: PM 4-5 (4pm-5pm)

SingalID	Seg	West Crossing	East Crossing	Signalized (Yes/No)
131-232	1	03 I 84 Onramp 31 WB W In	03 I 84 Exit 31 WB E In	Yes
131-248	1	04 Target W In		Yes
131-255	1	05 Executive W In		Yes
131-268	1	06 Corporate W In	06 Corporate E In	Yes
131-263	1		07 Curtiss E In	Yes
	1	08 Churchill W In		No
131-251	1		09 Spring E In	Yes
	1	10 Pines W In		No
131-253	1	11 Welch W In		Yes
131-225	1	12 w Queen W In	12 w Queen E In	Yes
131-264	1	13 Cumberland W In	13 Ridgeview E In	Yes
	1	14 Hidden Valley W In	14 Westwood E In	No
131-254	2		15 ESPN E In	Yes
017-255	2	16 Enterprise 1 W In		Yes
017-267	2		17 Ronzo E In	Yes
	2	18 Dell Manor W In		No
017-260	2	19 Enterprise 2 W In		Yes
017-221	2	20 Cross W In	20 RedStone E In	Yes
	2	21 Vincent W In		No
017-258	2	22 Battisto W In	22 Business Park E In	Yes
	2		23 WGate E In	No
017-261	2	24 Lake W In	24 Quest E In	Yes
017-201	2	25 Mountain W In	25 Pine E In	Yes
017-204	2	26 Riverside W In	26 Rte 72 E In	Yes
017-269	3		27 Broad E In	Yes
	3		28 1st E In	No
	3		29 2nd E In	No
	3		30 3rd E In	No
	3		31 4th E In	No
	3		32 5th E In	No
	3	33 Bernside W In		No
	3		34 6th E In	No
	3		35 New E In	No
017-259	3		36 W Washington E In	Yes
	3	37 Kingswood W In		No
	3		38 Holt E In	No
	3		39 Stonecrest E In	No
	3		40 Carpenter E In	No
	3	41 Woodland 1 W In	41 Brookside Commons E In	No
017-206	3	42 Woodland 2 W In		Yes
017-208	3	43 Dewitt W In	43 BEHS E In	Yes
017-207	3	44 Moody W In	44 Louisiana E In	Yes
	3	45 King Street W In		No
017-209	3	46 Farmington W In	46 Farmington E In	Yes
017-209	3	46 Farmington W In	46 Farmington E In	Yes

WorksheetID	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	INT TOT
3	0,(0),[0]	0,(0),[0]	0,(0),[0]	162,(157),[453]	21,(21),[47]	202,(191),[275]	109,(44),[73]	1037,(618),[1020]	0,(0),[0]	0,(0),[0]	322,(371),[633]	582,(385),[891]	582,(385),[891]
4	17,(130),[146]	0,(0),[0]	15,(150),[243]	0,(0),[0]	0,(0),[0]	0,(0),[0]	113,(153),[161]	1223,(676),[1211]	0,(0),[0]	0,(0),[0]	977,(636),[1301]	48,(141),[108]	48,(141),[108]
5	13,(0),[52]	0,(0),[0]	9,(0),[123]	0,(0),[0]	0,(0),[0]	0,(0),[0]	151,(30),[30]	1115,(761),[1312]	0,(0),[0]	0,(0),[0]	1015,(782),[1375]	81,(23),[12]	81,(23),[12]
6	49,(18),[25]	0,(0),[2]	54,(11),[29]	5,(11),[32]	0,(0),[0]	2,(10),[11]	46,(14),[39]	989,(690),[1207]	18,(8),[25]	4,(10),[5]	949,(722),[1235]	71,(28),[23]	71,(28),[23]
7	0,(0),[0]	0,(0),[0]	0,(0),[0]	32,(55),[97]	0,(0),[0]	200,(66),[94]	0,(0),[0]	930,(704),[1247]	105,(41),[77]	159,(87),[111]	953,(688),[1157]	0,(0),[0]	0,(0),[0]
8	10,(4),[4]	0,(0),[0]	105,(16),[24]	0,(0),[0]	0,(0),[0]	0,(0),[0]	4,(17),[26]	1173,(782),[1339]	0,(0),[0]	0,(0),[0]	1032,(794),[1297]	20,(15),[8]	20,(15),[8]
9	0,(0),[0]	0,(0),[0]	0,(0),[0]	12,(57),[66]	0,(0),[0]	26,(74),[111]	0,(0),[0]	1045,(682),[1184]	72,(70),[76]	58,(93),[105]	989,(691),[1161]	0,(0),[0]	0,(0),[0]
10	10,(2),[3]	0,(0),[0]	100,(23),[40]	0,(0),[0]	0,(0),[0]	0,(0),[0]	7,(23),[39]	1147,(807),[1356]	0,(0),[0]	0,(0),[0]	1027,(861),[1377]	7,(6),[12]	7,(6),[12]
11	98,(49),[30]	0,(0),[0]	153,(42),[70]	0,(0),[0]	0,(0),[0]	0,(0),[0]	48,(52),[67]	1063,(722),[1253]	0,(0),[0]	0,(0),[0]	917,(794),[1274]	19,(34),[80]	19,(34),[80]
12	3,(18),[73]	11,(34),[116]	46,(45),[136]	32,(108),[165]	90,(28),[6]	79,(196),[157]	167,(36),[15]	895,(602),[1138]	213,(150),[137]	100,(216),[156]	835,(665),[1073]	11,(23),[25]	11,(23),[25]
13	5,(10),[20]	0,(6),[0]	7,(2),[4]	18,(58),[18]	0,(0),[0]	0,(0),[4]	26,(35),[41]	919,(750),[1234]	9,(48),[26]	12,(5),[4]	874,(818),[1181]	36,(42),[16]	36,(42),[16]
14	0,(0),[0]	0,(0),[0]	0,(0),[0]	4,(3),[0]	0,(0),[0]	0,(2),[0]	0,(0),[0]	905,(754),[1255]	18,(2),[12]	0,(2),[3]	935,(875),[1212]	0,(0),[0]	0,(0),[0]
15	0,(0),[0]	0,(0),[0]	0,(0),[0]	10,(39),[97]	0,(0),[0]	45,(26),[56]	0,(0),[0]	875,(746),[1222]	51,(24),[45]	35,(21),[40]	943,(868),[1141]	0,(0),[0]	0,(0),[0]
16	9,(20),[26]	0,(0),[0]	23,(91),[77]	0,(0),[0]	0,(0),[0]	0,(0),[0]	93,(93),[58]	802,(698),[1234]	0,(0),[0]	0,(0),[0]	938,(785),[1035]	23,(9),[33]	23,(9),[33]
17	0,(0),[0]	0,(0),[0]	0,(0),[0]	242,(144),[247]	0,(0),[0]	41,(36),[99]	0,(0),[0]	578,(571),[924]	219,(138),[306]	68,(63),[48]	685,(620),[778]	0,(0),[0]	0,(0),[0]
18	0,(8),[31]	0,(0),[0]	2,(3),[9]	0,(0),[0]	0,(0),[0]	0,(0),[0]	11,(20),[11]	577,(564),[951]	0,(0),[0]	0,(0),[0]	775,(698),[828]	39,(27),[13]	39,(27),[13]
19	37,(74),[128]	0,(0),[0]	47,(97),[74]	0,(0),[0]	0,(0),[0]	0,(0),[0]	47,(53),[81]	530,(525),[917]	0,(0),[0]	0,(0),[0]	734,(619),[722]	185,(85),[81]	185,(85),[81]
20	13,(66),[116]	127,(70),[107]	11,(33),[20]	41,(73),[49]	71,(91),[138]	164,(103),[254]	6,(40),[36]	503,(528),[919]	42,(40),[53]	304,(153),[202]	811,(593),[693]	75,(77),[53]	75,(77),[53]
21	43,(13),[18]	0,(0),[0]	38,(51),[55]	0,(0),[0]	0,(0),[0]	0,(0),[0]	29,(43),[50]	604,(608),[1117]	0,(0),[0]	0,(0),[0]	1053,(707),[821]	80,(21),[26]	80,(21),[26]
22	42,(27),[34]	5,(5),[19]	68,(24),[31]	16,(3),[9]	4,(4),[9]	6,(16),[89]	44,(45),[54]	596,(648),[1155]	76,(14),[16]	125,(50),[23]	1112,(732),[854]	74,(38),[31]	74,(38),[31]
23	0,(0),[0]	0,(0),[0]	0,(0),[0]	18,(19),[29]	0,(0),[0]	33,(28),[27]	0,(0),[0]	615,(640),[1209]	25,(24),[26]	15,(43),[28]	1197,(687),[868]	0,(0),[0]	0,(0),[0]
24	323,(112),[218]	16,(4),[8]	14,(12),[20]	4,(9),[10]	0,(0),[8]	1,(4),[4]	6,(6),[13]	544,(559),[1055]	3,(23),[19]	12,(6),[5]	1047,(674),[770]	131,(135),[296]	131,(135),[296]
25	88,(58),[66]	767,(329),[443]	485,(265),[306]	164,(113),[186]	444,(257),[717]	40,(65),[107]	264,(203),[380]	488,(391),[716]	104,(92),[175]	102,(52),[88]	539,(445),[593]	19,(27),[70]	19,(27),[70]
26	376,(188),[244]	796,(336),[524]	323,(217),[319]	5,(17),[26]	462,(330),[656]	52,(84),[147]	224,(192),[382]	419,(342),[543]	16,(11),[15]	79,(81),[105]	391,(316),[438]	143,(183),[356]	143,(183),[356]
27	0,(0),[0]	0,(0),[0]	0,(0),[0]	128,(177),[392]	0,(0),[0]	44,(57),[97]	0,(0),[0]	576,(468),[718]	469,(217),[304]	84,(35),[46]	529,(455),[649]	0,(0),[0]	0,(0),[0]
28	0,(0),[0]	0,(0),[0]	0,(0),[0]	5,(16),[5]	0,(0),[0]	2,(3),[5]	0,(0),[0]	683,(565),[891]	17,(13),[7]	14,(5),[2]	647,(533),[759]	0,(0),[0]	0,(0),[0]
29	0,(0),[0]	0,(0),[0]	0,(0),[0]	7,(16),[3]	0,(0),[0]	0,(6),[0]	0,(0),[0]	669,(555),[869]	11,(21),[20]	13,(7),[10]	654,(528),[769]	0,(0),[0]	0,(0),[0]
30	0,(0),[0]	0,(0),[0]	0,(0),[0]	29,(0),[0]	0,(0),[0]	10,(18),[13]	0,(0),[0]	674,(567),[886]	10,(22),[22]	4,(11),[31]	657,(528),[765]	0,(0),[0]	0,(0),[0]
31	0,(0),[0]	0,(0),[0]	0,(0),[0]	0,(0),[17]	0,(0),[0]	16,(0),[11]	0,(0),[0]	657,(477),[869]	11,(0),[45]	4,(0),[0]	677,(522),[770]	0,(0),[0]	0,(0),[0]
32	0,(0),[0]	0,(0),[0]	0,(0),[0]	12,(4),[3]	0,(0),[0]	24,(10),[2]	0,(0),[0]	657,(481),[877]	6,(8),[10]	0,(4),[16]	647,(503),[759]	0,(0),[0]	0,(0),[0]
33	0,(0),[0]	0,(0),[0]	27,(6),[3]	0,(0),[0]	0,(0),[0]	0,(0),[0]	3,(6),[23]	660,(485),[876]	0,(0),[0]	0,(0),[0]	646,(514),[773]	3,(6),[4]	3,(6),[4]
34	0,(0),[0]	0,(0),[0]	0,(0),[0]	17,(7),[5]	0,(0),[0]	6,(4),[9]	0,(0),[0]	652,(476),[870]	2,(6),[14]	2,(4),[26]	642,(508),[774]	0,(0),[0]	0,(0),[0]
35	0,(0),[0]	0,(0),[0]	0,(0),[0]	0,(0),[21]	0,(0),[0]	44,(24),[40]	0,(0),[0]	685,(0),[903]	14,(31),[31]	138,(10),[101]	641,(536),[784]	0,(0),[0]	0,(0),[0]
36	0,(0),[0]	0,(0),[0]	0,(0),[0]	96,(95),[134]	0,(0),[0]	114,(148),[270]	0,(0),[0]	591,(508),[787]	77,(60),[83]	322,(138),[182]	546,(427),(635]	0,(0),[0]	0,(0),[0]
37	0,(0),[3]	0,(0),[0]	2,(0),[9]	0,(0),[0]	0,(0),[0]	0,(0),[0]	6,(5),[0]	627,(583),[951]	0,(0),[0]	0,(0),[0]	808,(517),[756]	10,(2),[4]	10,(2),[4]
38	0,(0),[0]	0,(0),[0]	0,(0),[0]	0,(0),[3]	0,(0),[0]	4,(9),[8]	0,(0),[0]	636,(584),[954]	0,(4),[3]	19,(14),[16]	801,(520),[751]	0,(0),[0]	0,(0),[0]
39	0,(0),[0]	0,(0),[0]	0,(0),[0]	0,(12),[0]	0,(0),[0]	12,(35),[29]	0,(0),[0]	609,(575),[952]	78,(28),[48]	12,(21),[49]	0,(505),[0]	0,(0),[0]	0,(0),[0]
40	0,(0),[0]	0,(0),[0]	0,(0),[0]	85,(23),[20]	0,(0),[0]	99,(43),[59]	0,(0),[0]	512,(562),[921]	111,(21),[27]	186,(17),[44]	728,(477),[715]	0,(0),[0]	0,(0),[0]
41	5,(6),[4]	0,(0),[0]	298,(126),[190]	0,(0),[0]	0,(0),[0]	0,(0),[0]	126,(134),[256]	499,(460),[731]	0,(0),[0]	0,(0),[0]	637,(385),[592]	18,(3),[14]	18,(3),[14]
42	115,(96),[169]	0,(0),[0]	11,(5),[10]	0,(0),[0]	0,(0),[0]	0,(0),[0]	7,(3),[13]	542,(510),[797]	0,(0),[0]	0,(0),[0]	672,(401),[633]	76,(86),[92]	76,(86),[92]
43	11,(7),[11]	0,(0),[4]	45,(10),[28]	9,(10),[6]	0,(4),[0]	8,(29),[15]	7,(31),[32]	576,(555),[898]	30,(0),[7]	64,(1),[11]	695,(447),[676]	13,(24),[30]	13,(24),[30]
44	5,(4),[8]	51,(21),[30]	55,(30),[58]	54,(64),[96]	21,(32),[74]	0,(52),[0]	0,(41),[0]	560,(507),[796]	54,(102),[137]	59,(27),[32]	675,(354),(538]	0,(9),[0]	0,(9),[0]
45	57,(23),[21]	0,(0),[0]	369,(157),[176]	0,(0),[0]	0,(0),[0]	0,(0),[0]	3,(17),[17]	595,(523),[833]	0,(0),[0]	0,(0),[0]	497,(287),[467]	5,(11),[13]	5,(11),[13]
46X	3,(0),[2]	749,(550),[720]	7,(0),[4]	165,(171),[274]	364,(652),[942]	5,(1),[7]	231,(272),[514]	0,(0),[0]	364,(251),[319]	0,(0),[0]	0,(0),[8]	0,(0),[0]	0,(0),[0]
47	0,(0),[0]	749,(550),[720]	373,(160),[175]	3,(6),[11]	364,(652),[942]	0,(0),[0]	0,(4),[2]	0,(0),[0]	22,(11),[21]	0,(0),[0]	0,(0),[0]	0,(0),[0]	0,(0),[0]

24-HRS

0: All Day (12am-12am)

SingalID	Seg	West Crossing	East Crossing	Signalized (Yes/No)
131-232	1	03 I 84 Onramp 31 WB W In	03 I 84 Exit 31 WB E In	Yes
131-248	1	04 Target W In		Yes
131-255	1	05 Executive W In		Yes
131-268	1	06 Corporate W In	06 Corporate E In	Yes
131-263	1		07 Curtiss E In	Yes
	1	08 Churchill W In		No
131-251	1		09 Spring E In	Yes
	1	10 Pines W In		No
131-253	1	11 Welch W In		Yes
131-225	1	12 w Queen W In	12 w Queen E In	Yes
131-264	1	13 Cumberland W In	13 Ridgeview E In	Yes
	1	14 Hidden Valley W In	14 Westwood E In	No
131-254	2		15 ESPN E In	Yes
017-255	2	16 Enterprise 1 W In		Yes
017-267	2		17 Ronzo E In	Yes
	2	18 Dell Manor W In		No
017-260	2	19 Enterprise 2 W In		Yes
017-221	2	20 Cross W In	20 RedStone E In	Yes
	2	21 Vincent W In		No
017-258	2	22 Battisto W In	22 Business Park E In	Yes
	2		23 WGate E In	No
017-261	2	24 Lake W In	24 Quest E In	Yes
017-201	2	25 Mountain W In	25 Pine E In	Yes
017-204	2	26 Riverside W In	26 Rte 72 E In	Yes
017-269	3		27 Broad E In	Yes
	3		28 1st E In	No
	3		29 2nd E In	No
	3		30 3rd E In	No
	3		31 4th E In	No
	3		32 5th E In	No
	3	33 Bernside W In		No
	3		34 6th E In	No
	3		35 New E In	No
017-259	3		36 W Washington E In	Yes
	3	37 Kingswood W In		No
	3		38 Holt E In	No
	3		39 Stonecrest E In	No
	3		40 Carpenter E In	No
	3	41 Woodland 1 W In	41 Brookside Commons E In	No
017-206	3	42 Woodland 2 W In		Yes
017-208	3	43 Dewitt W In	43 BEHS E In	Yes
017-207	3	44 Moody W In	44 Louisiana E In	Yes
	3	45 King Street W In		No
017-209	3	46 Farmington W In	46 Farmington E In	Yes
017-209	3	46 Farmington W In	46 Farmington E In	Yes

Worksheet ID	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	INT TOT
3	0	0	1	3775	419	3360	904	12831	0	0	6203	9048	36541
4	1519	0	1976	0	0	0	2142	14917	0	0	13886	1543	35983
5	318	0	678	0	0	0	933	15515	0	0	15254	434	33132
6	389	5	435	201	15	89	545	14035	226	93	13927	607	30567
7	0	0	0	713	0	1307	0	14288	807	1349	13516	0	31980
8	63	0	390	0	0	0	405	15569	0	0	15048	155	31630
9	0	0	0	771	0	1223	0	14004	950	1180	13589	0	31717
10	65	0	502	0	0	0	485	16027	0	0	15831	118	33028
11	630	0	1027	0	0	0	991	14664	0	0	14535	744	32591
12	463	566	1027	1471	694	2512	1260	13088	1779	2122	12696	611	38289
13	235	79	85	313	21	43	422	14906	444	138	13982	408	31076
14	16	0	35	89	0	37	9	15044	169	66	14666	0	30131
15	0	0	0	762	0	568	0	14512	759	490	14312	0	31403
16	289	0	1052	0	0	0	1177	14274	0	0	13284	270	30346
17	0	0	0	2928	0	835	0	11054	3299	771	10183	0	29070
18	189	0	133	0	0	0	210	11110	0	0	11152	469	23263
19	1130	0	852	0	0	0	863	10549	0	0	10308	1529	25231
20	878	1534	325	673	1603	2354	457	10296	701	2626	10383	933	32763
21	302	0	545	0	0	0	616	12049	0	0	12219	525	26256
22	414	101	503	142	121	526	653	12488	322	608	12642	650	29170
23	0	0	0	398	0	428	0	12789	442	442	13079	0	27578
24	2607	136	193	144	44	70	177	11129	248	110	11546	2782	29186
25	900	6508	4561	2383	6364	1011	4272	7637	2036	1065	7837	502	45076
26	2924	6651	3826	244	7015	1544	3801	6248	186	1275	6083	3161	42958
27	0	0	0	3483	0	876	0	8427	3731	671	8543	0	25731
28	0	0	0	98	0	39	0	10147	219	52	10071	0	20626
29	0	0	0	128	0	72	0	10046	249	86	10015	0	20596
30	0	0	0	172	0	134	0	10210	132	132	9982	0	20762
31	0	0	0	81	0	117	0	9950	140	104	10216	0	20608
32	0	0	0	161	0	107	0	9994	196	107	9857	0	20422
33	63	0	121	0	0	0	145	9968	0	0	10019	62	20378
34	0	0	0	137	0	173	0	9882	160	220	9898	0	20470
35	0	0	0	207	0	627	0	10290	305	557	10031	0	22017
36	0	0	0	1564	0	2443	0	9035	1033	2575	8282	0	24932
37	52	0	68	0	0	0	139	10335	0	0	10101	93	20788
38	0	0	0	70	0	157	0	10389	50	189	10094	0	20949
39	0	0	0	0	0	313	0	10312	593	401	0	0	11619
40	0	0	0	455	0	641	0	9774	522	662	9367	0	21421
41	80	0	2531	0	0	0	2589	7983	0	0	7854	88	21125
42	1589	0	111	0	0	0	113	8799	0	0	8279	1432	20323
43	115	6	261	86	15	217	364	9527	70	125	9102	218	20106
44	106	382	556	1227	687	0	0	8662	1369	536	7532	0	21057
45	428	0	3124	0	0	0	206	9233	0	0	6078	115	19184
46X	0	9199	0	3216	10895	52	5375	32	3858	19	26	0	32672
47	0	9199	3296	119	10895	0	35	0	230	0	0	0	23774

Padlo, Pat

From: Jacobson, Richard C
Sent: Monday, May 10, 2021 10:48 AM
To: Padlo, Pat
Cc: Sojka, Gary J; Patel, Dhruval H.; Bergeron, Anna
Subject: Re: Route 229 Corridor Study: Growth rate for Bristol / Southington (20 years out)
Attachments: 2040 Final.pdf

Hi Pat,

Attached are the projected 2040 volumes for the Route 229 corridor study. We have included a traffic volume redistribution for ESPN which came into the Office of the State Traffic Administration recently. In that re-distribution two of the site drives to ESPN on Ronzo Road are closed and all traffic is re-routed to the main site drive on Route 229. This will have the effect of increasing the volumes on Route 229 since 2012 non covid volumes were re-distributed which were higher than the existing volumes shown accessing ESPN in the Route 229 corridor study. If you have any questions let us know.

Rick Jacobson
Transportation Planner II
Bureau of Policy-and Planning
Connecticut Department of Transportation
richard.jacobson@ct.gov
(860) 594-2035

From: Padlo, Pat
Sent: Tuesday, April 27, 2021 9:57 PM
To: Sojka, Gary J <
Cc: Bergeron, Anna <; Jacobson, Richard C < Hiller, Todd ; Patel, Dhruval H. <>; Dion, Michael ; Klose, Katherine
Subject: RE: Route 229 Corridor Study: Growth rate for Bristol / Southington (20 years out)

EXTERNAL EMAIL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Hi Gary,
NP, please see attached.
The original file with the "red adjusted" volumes (FromCTDOT_Rt229Diagram_Total.pdf) and fresh set (2020_CTDOT_VolFresh.pdf).
In the updated figures, I've also highlighted links where there are no driveways/ curb cuts to account for volume differences between intersections. Hope that helps.
We understand the required time, as this is a long corridor and will take a while to develop 2040 volumes.

Thank you again,
Pat

Pat Padlo, P.E., PTOE
Project Manager
BL Companies | ***Employee owned. Client driven.***

355 Research Parkway, Meriden, CT 06450
tel: **203.630.1406** | direct: 203.608.2588
mobile: 203.623.6881 | fax: 203.630.2615
www.blcompanies.com

From: Sojka, Gary J <
Sent: Tuesday, April 27, 2021 3:03 PM
To: Padlo, Pat <
Cc:

Subject: Re: Route 229 Corridor Study: Growth rate for Bristol / Southington (20 years out)

Pat,

So we are on the same page please forward the updated 2020 existing volumes that we reviewed and adjusted. From there we will develop the 2040 projected volumes, make sure the diagrams are editable.

Please allow 2-3 weeks on our end for the development of the 2040 volumes.

Thank you,

Gary J. Sojka
Transportation Supervising Planner
Connecticut Department of Transportation
Bureau of Policy and Planning
2800 Berlin Turnpike
Newington, CT 06111

From: "Padlo, Pat" <
Date: Thursday, April 22, 2021 at 2:07 PM
To: "Sojka, Gary J" <

Subject: FW: Route 229 Corridor Study: Growth rate for Bristol / Southington (20 years out)

	Movement	2021 BASE IN			Apply Growth Factor	2040 No Build			AM Proposed Site(s) Generated Site 20 Year			2041AM	PM Proposed Site(s) Generated Site 20 Year			2041PM	MD Proposed Site(s) Generated Site 20 Year			2041_SAT	
	1	King Street at Farmington Avenue / US6				King Street at Farmington Avenue / US6			King Street at Farmington Avenue / US6		2041	King Street at Farmington Avenue / US6	King Street at Farmington Avenue / US6		2041	King Street at Farmington Avenue / US6	King Street at Farmington Avenue / US6		2041	King Street at Farmington Avenue / US6	
	Movement	AM	MD Sat	PM		AM	MD Sat	PM	Origin	Destination	Total	2041 AM	Origin	Destination	Total	2041 PM	Origin	Destination	Total	2041_SAT	AM/MD/PM
US 6/ Farmington Ave	EB LEFT	3	0	2	X	5	0	5	0	0	0	5	0	0	0	5	0	0	0	0	0
	EB THRU	749	670	720	X	825	735	790	0	0	0	825	0	0	0	790	0	0	0	735	0
	EB RIGHT	19	30	4	X	20	35	5	0	75	75	95	0	92	92	97	0	121	121	156	170
US 6/ Farmington Ave	WB LEFT	180	237	274	X	200	260	300	0	77	77	277	0	94	94	394	0	123	123	383	370
	WB THRU	364	652	942	X	400	715	1035	0	0	0	400	0	0	0	1035	0	0	0	715	0
	WB RIGHT	5	1	7	X	5	5	10	0	0	0	5	0	0	0	10	0	0	0	5	0
King St	NB LEFT	161	252	404	X	175	275	445	79	0	79	254	77	0	77	522	110	0	110	385	170
	NB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NB RIGHT	289	232	312	X	320	255	345	81	0	81	401	79	0	79	424	112	0	112	367	370
King St	SB LEFT	2	1	2	X	5	5	5	0	0	0	5	0	0	0	5	0	0	0	5	0
	SB THRU	8	19	8	X	10	20	10	0	0	0	10	0	0	0	10	0	0	0	20	0
	SB RIGHT	0	4	2	X	0	5	5	0	0	0	0	0	0	0	5	0	0	0	5	0
	2	King Street at Moody Street/ Louisiana Avenue			Apply Growth Factor	King Street at Moody Street/ Louisiana Avenue			King Street at Moody Street/ Louisiana Avenue		2041	King Street at Moody Street/ Louisiana	King Street at Moody Street/ Louisiana Avenue		2041	King Street at Moody Street/ Louisiana	King Street at Moody Street/ Louisiana Avenue		2041	King Street at Moody Street/ Louisiana	2041
	Movement	AM	MD Sat	PM		AM	MD Sat	PM	Origin	Destination	Total	2041 AM	Origin	Destination	Total	2041 PM	Origin	Destination	Total	2041Sat	Origin
Moody Street/ Louisiana	EB LEFT	15	4	8	X	15	5	10	0	0	0	15	0	0	0	10	0	0	0	5	0
	EB THRU	51	21	30	X	55	25	35	0	0	0	55	0	0	0	35	0	0	0	25	0
	EB RIGHT	55	30	58	X	60	35	65	0	6	6	66	0	20	20	85	0	8	8	43	55
Moody St/ Louisiana Ave	WB LEFT	52	72	96	X	55	80	105	0	9	9	64	0	20	20	125	0	18	18	98	80
	WB THRU	21	32	74	X	25	35	80	0	0	0	25	0	0	0	80	0	0	0	35	0
	WB RIGHT	20	44	0	X	20	50	0	1	0	1	21	1	0	1	1	1	0	1	51	100
King St	NB LEFT	0	49	5	X	0	55	5	15	0	15	15	7	0	7	12	16	0	16	71	55
	NB THRU	400	480	790	X	440	530	870	158	0	158	598	159	0	159	1029	223	0	223	753	440
	NB RIGHT	85	77	128	X	95	85	140	16	0	16	111	10	0	10	150	19	0	19	104	80
King St	SB LEFT	41	27	32	X	45	30	35	0	1	1	46	0	1	1	36	0	1	1	31	100
	SB THRU	410	440	610	X	450	485	670	0	152	152	602	0	183	183	853	0	243	243	728	440
	SB RIGHT	16	9	0	X	20	10	0	0	0	0	20	0	0	0	0	0	0	0	10	0
	3	King Street at Page Park Road/ High School				King Street at Page Park Road/ High School			King Street at Page Park Road/ High School		2041	King Street at Page Park Road/ High School	King Street at Page Park Road/ High School		2041	King Street at Page Park Road/ High School	King Street at Page Park Road/ High School		2041	King Street at Page Park Road/ High School	2041
	Movement	AM	MD Sat	PM		AM	MD Sat	PM	Origin	Destination	Total	2041 AM	Origin	Destination	Total	2041 PM	Origin	Destination	Total	2041Sat	Origin
Page Park Road/ High	EB LEFT	8	19	15	X	10	20	15	0	0	0	10	0	0	0	15	0	0	0	20	0
	EB THRU	0	4	4	X	0	5	5	0	0	0	0	0	0	0	5	0	0	0	5	0
	EB RIGHT	19	10	6	X	20	10	10	0	0	0	20	0	0	0	10	0	0	0	10	0
Page Park Road/ High	WB LEFT	55	25	28	X	60	30	30	0	0	0	60	0	0	0	30	0	0	0	30	0
	WB THRU	0	0	4	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB RIGHT	11	7	11	X	15	10	15	0	0	0	15	0	0	0	15	0	0	0	10	0
King St	NB LEFT	9	31	32	X	10	35	35	0	0	0	10	0	0	0	35	0	0	0	35	0
	NB THRU	470	580	900	X	515	640	990	192	0	192	707	180	0	180	1170	259	0	259	899	575
	NB RIGHT	30	11	25	X	35	15	30	0	0	0	35	0	0	0	30	0	0	0	15	0
King St	SB LEFT	17	1	11	X	20	5	15	0	0	0	20	0	0	0	15	0	0	0	5	0
	SB THRU	500	520	760	X	550	570	835	0	168	168	718	0	223	223	1058	0	271	271	841	575
	SB RIGHT	5	24	20	X	5	25	20	0	0	0	5	0	0	0	20	0	0	0	25	0
	4	King Street at Woodland Street			Apply Growth Factor	King Street at Woodland Street			King Street at Woodland Street		2041	King Street at Woodland Street	King Street at Woodland Street		2041	King Street at Woodland Street	King Street at Woodland Street		2041	King Street at Woodland Street	2041
	Movement	AM	MD Sat	PM		AM	MD Sat	PM	Origin	Destination	Total	2041 AM	Origin	Destination	Total	2041 PM	Origin	Destination	Total	2041Sat	Origin
Woodland St	EB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
King St	NB LEFT	5	3	27	X	5	5	30	0	3	3	8	0	0	0	30	0	1	1	6	10
	NB THRU	510	550	850	X	560	605	935	190	0	190	750	175	0	175	1110	254	0	254	859	555
	NB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
King St	SB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SB THRU	530	480	760	X	585	530	835	0	163	163	748	0	223	223	1058	0	269	269	799	555
	SB RIGHT	46	76	32	X	50	85	35	0	5	5	55	0	0	0	35	0	2	2	87	20

Woodland St	NE LEFT	1	96	109	X	5	105	120	2	0	2	7	5	0	5	125	5	0	5	110	20
	NE RIGHT	13	23	30	X	15	25	35	1	0	1	16	3	0	3	38	2	0	2	27	10
9		King Street at West Washington Street			Apply Growth Factor	King Street at West Washington Street			King Street at West Washington Street		2041	King Street at West Washington	King Street at West Washington Street		2041	King Street at West Washington	King Street at West Washington Street		2041	King Street at West Washington	2041
	Movement	AM	MD Sat	PM		AM	MD Sat	PM	Origin	Destination	Total	2041 AM	Origin	Destination	Total	2041 PM	Origin	Destination	Total	2041Sat	Origin
	EB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W Washington St	WB LEFT	127	98	137	X	127	98	137	3	33	36	163	5	56	61	198	60	60	120	218	245
	WB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB RIGHT	33	118	168	X	33	118	168	2	3	5	38	5	0	5	173	4	1	5	123	160
King St	NB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NB THRU	480	500	697	X	480	500	697	188	0	188	668	170	0	170	867	250	0	250	750	405
	NB RIGHT	57	38	126	X	57	38	126	41	9	50	107	46	6	52	178	68	7	75	113	245
King St	SB LEFT	139	108	125	X	139	108	125	1	4	5	144	3	3	6	131	2	3	5	113	160
	SB THRU	530	470	680	X	530	470	680	0	159	159	689	0	220	220	900	0	266	266	736	405
	SB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18		King Street at Broad Street			Apply Growth Factor	King Street at Broad Street			King Street at Broad Street		2041	King Street at Broad Street	King Street at Broad Street		2041	King Street at Broad Street	King Street at Broad Street		2041	King Street at Broad Street	2041
	Movement	AM	MD Sat	PM		AM	MD Sat	PM	Origin	Destination	Total	2041 AM	Origin	Destination	Total	2041 PM	Origin	Destination	Total	2041Sat	Origin
	EB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Broad St	WB LEFT	115	177	362	X	115	177	362	0	3	3	118	0	0	0	362	0	1	1	178	10
	WB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB RIGHT	34	86	103	X	34	86	103	0	0	0	34	0	0	0	103	0	0	0	86	0
King St	NB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NB THRU	470	440	840	X	470	440	840	230	9	239	709	217	6	223	1063	318	7	325	765	650
	NB RIGHT	212	157	202	X	212	157	202	1	0	1	213	3	0	3	205	2	0	2	159	10
King St	SB LEFT	38	56	46	X	38	56	46	0	0	0	38	0	0	0	46	0	0	0	56	0
	SB THRU	570	470	649	X	570	470	649	3	192	195	765	5	277	282	931	60	325	385	855	650
	SB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19		Middle Street at Riverside Avenue/ Relocated Route 72				Middle Street at Riverside Avenue/ Relocated Route 72			Middle Street at Riverside Avenue/ Relocated Route 72		2041	Middle Street at Riverside Avenue/	Middle Street at Riverside Avenue/ Relocated Route 72		2041	Middle Street at Riverside Avenue/	Middle Street at Riverside Avenue/ Relocated Route 72		2041	Middle Street at Riverside Avenue/	2041
	Movement	AM	MD Sat	PM		AM	MD Sat	PM	Origin	Destination	Total	2041 AM	Origin	Destination	Total	2041 PM	Origin	Destination	Total	2041Sat	Origin
Riverside Ave / Relocated Route	EB LEFT	124	149	244	X	135	165	270	1	4	5	140	3	2	5	275	2	3	5	170	73
	EB THRU	436	336	524	X	480	370	575	0	0	0	480	0	0	0	575	0	0	0	370	0
	EB RIGHT	294	217	319	X	325	240	350	5	83	88	413	16	77	93	443	14	127	141	381	135
Riverside Ave/ Relocated Route	WB LEFT	5	17	26	X	5	20	30	0	0	0	5	0	0	0	30	0	0	0	20	0
	WB THRU	462	330	656	X	510	365	720	0	0	0	510	0	0	0	720	0	0	0	365	0
	WB RIGHT	102	84	154	X	110	90	170	0	3	3	113	0	1	1	171	0	2	2	92	43
Middle Street	NB LEFT	194	192	297	X	215	210	325	66	16	82	297	67	1	68	393	98	5	103	313	135
	NB THRU	456	360	640	X	500	395	705	230	3	233	733	217	1	218	923	318	2	320	715	544
	NB RIGHT	16	46	16	X	20	50	20	0	0	0	20	0	0	0	20	0	0	0	50	0
Middle Street	SB LEFT	69	94	197	X	75	105	215	1	0	1	76	1	0	1	216	20	0	20	125	43
	SB THRU	480	360	438	X	530	395	480	1	192	193	723	1	277	278	758	20	325	345	740	544
	SB RIGHT	133	196	376	X	145	215	415	2	3	5	150	2	0	2	417	21	1	22	237	73
20		Middle Street at Mountain Road/ Pine St				Middle Street at Mountain Road/ Pine St			Middle Street at Mountain Road/ Pine St		2041	Middle Street at Mountain Road/ Pine St	Middle Street at Mountain Road/ Pine St		2041	Middle Street at Mountain Road/ Pine St	Middle Street at Mountain Road/ Pine St		2041	Middle Street at Mountain Road/ Pine St	2041
	Movement	AM	MD Sat	PM		AM	MD Sat	PM	Origin	Destination	Total	2041 AM	Origin	Destination	Total	2041 PM	Origin	Destination	Total	2041Sat	Origin
Mountain Rd/ Pine St	EB LEFT	106	48	66	X	115	55	75	4	2	6	121	4	1	5	80	13	2	15	70	154
	EB THRU	571	329	443	X	630	360	485	0	0	0	630	0	0	0	485	0	0	0	360	0
	EB RIGHT	336	205	226	X	370	225	250	2	115	117	487	2	125	127	377	9	180	189	414	200
Mountain Rd/ Pine St	WB LEFT	130	113	156	X	145	125	170	0	110	110	255	0	122	122	292	0	171	171	296	115
	WB THRU	189	257	717	X	210	285	790	0	0	0	210	0	0	0	790	0	0	0	285	0
	WB RIGHT	98	41	115	X	110	45	125	0	4	4	114	0	0	0	125	0	1	1	46	20
Middle St	NB LEFT	139	203	440	X	155	225	485	110	1	111	266	124	3	127	612	173	27	200	425	200
	NB THRU	470	510	770	X	515	560	845	290	13	303	818	281	1	282	1127	403	5	408	968	505
	NB RIGHT	105	122	220	X	115	135	240	108	0	108	223	120	0	120	360	164	0	164	299	115
Middle St	SB LEFT	69	80	112	X	75	90	125	2	0	2	77	4	0	4	129	22	0	22	112	54
	SB THRU	880	500	593	X	970	550	650	4	273	277	1247	14	350	364	1014	11	414	425	975	505
	SB RIGHT	54	55	78	X	60	60	85	0	2	2	62	0	4	4	89	0	39	39	99	120

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	Movement	Middle Street at Lake Avenue/ Terry Commons Driveway AM	MD Sat	PM	Apply Growth Factor	Middle Street at Lake Avenue/ Terry Commons Driveway AM	MD Sat	PM	Middle Street at Lake Avenue/ Terry Commons Driveway Origin	Destination	Total	2041 Middle Street at Lake Avenue/ Terry Commons 2041 AM	Middle Street at Lake Avenue/ Terry Commons Driveway Origin	Destination	Total	2041 Middle Street at Lake Avenue/ Terry Commons 2041 PM	Middle Street at Lake Avenue/ Terry Commons Driveway Origin	Destination	Total	2041 Middle Street at Lake Avenue/ Terry Commons 2041Sat	2041 Origin
Lake Ave / Terry Common s Dr	EB LEFT	111	117	218	X	120	130	240	0	0	0	120	0	1	1	241	0	7	7	137	20
	EB THRU	16	4	8	X	20	5	10	0	0	0	20	0	0	0	10	0	0	0	5	0
	EB RIGHT	14	12	20	X	15	15	20	0	4	4	19	0	16	16	36	0	0	0	15	10
Lake Ave / Terry Common s Dr	WB LEFT	4	9	10	X	5	10	10	0	4	4	9	0	16	16	26	0	0	0	10	10
	WB THRU	0	0	8	X	0	0	10	0	0	0	0	0	0	0	10	0	0	0	0	0
	WB RIGHT	1	4	4	X	5	5	5	0	0	0	5	0	0	0	5	0	0	0	5	0
Middle St	NB LEFT	9	6	33	X	10	10	35	8	0	8	18	7	0	7	42	3	0	3	13	10
	NB THRU	600	705	1200	X	660	775	1320	509	14	523	1183	531	3	534	1854	740	25	765	1540	800
	NB RIGHT	24	23	53	X	25	25	60	8	0	8	33	7	0	7	67	3	0	3	28	10
Middle St	SB LEFT	7	6	5	X	10	10	5	0	0	0	10	0	0	0	5	0	0	0	10	0
	SB THRU	1330	820	739	X	1465	900	815	5	496	501	1966	15	598	613	1428	18	764	782	1682	800
	SB RIGHT	117	125	231	X	130	140	255	0	0	0	130	0	0	0	255	2	0	2	142	20

23

	Movement	Middle Street at Battista Road/ Business Park Drive AM	MD Sat	PM	Apply Growth Factor	Middle Street at Battista Road/ Business Park Drive AM	MD Sat	PM	Middle Street at Battista Road/ Business Park Drive Origin	Destination	Total	2041 Middle Street at Battista Road/ Business Park 2041 AM	Middle Street at Battista Road/ Business Park Drive Origin	Destination	Total	2041 Middle Street at Battista Road/ Business Park 2041 PM	Middle Street at Battista Road/ Business Park Drive Origin	Destination	Total	2041 Middle Street at Battista Road/ Business Park 2041Sat	2041 Origin
Battista Rd / Business Park Dr	EB LEFT	42	34	34	X	45	35	35	0	0	0	45	0	0	0	35	0	0	0	35	0
	EB THRU	10	0	19	X	10	0	20	0	0	0	10	0	0	0	20	0	0	0	0	0
	EB RIGHT	68	16	31	X	75	20	35	0	0	0	75	0	0	0	35	0	0	0	20	0
Battista Rd/ Business Park Dr	WB LEFT	16	8	30	X	20	10	35	38	0	38	58	14	0	14	49	66	0	66	76	100
	WB THRU	4	9	9	X	5	10	10	0	0	0	5	0	0	0	10	0	0	0	10	0
	WB RIGHT	20	48	120	X	20	55	130	38	0	38	58	14	0	14	144	66	0	66	121	100
Middle St	NB LEFT	62	42	54	X	70	45	60	0	0	0	70	0	0	0	60	0	0	0	45	0
	NB THRU	550	590	1150	X	605	650	1265	487	14	501	1106	530	3	533	1798	680	25	705	1355	720
	NB RIGHT	51	22	31	X	55	25	35	0	11	11	66	0	38	38	73	0	37	37	62	100
Middle St	SB LEFT	90	14	23	X	100	15	25	0	11	11	111	0	38	38	63	0	37	37	52	100
	SB THRU	1060	800	729	X	1165	880	800	5	494	499	1664	15	592	607	1407	18	727	745	1625	720
	SB RIGHT	46	23	31	X	50	25	35	0	0	0	50	0	0	0	35	0	0	0	25	0

25

	Movement	Middle Street at Cross Street/ Redstone Hill Road AM	MD Sat	PM	Apply Growth Factor	Middle Street at Cross Street/ Redstone Hill Road AM	MD Sat	PM	Middle Street at Cross Street/ Redstone Hill Road Origin	Destination	Total	2041 Middle Street at Cross Street/ Redstone Hill 2041 AM	Middle Street at Cross Street/ Redstone Hill Road Origin	Destination	Total	2041 Middle Street at Cross Street/ Redstone Hill 2041 PM	Middle Street at Cross Street/ Redstone Hill Road Origin	Destination	Total	2041 Middle Street at Cross Street/ Redstone Hill 2041Sat	2041 Origin
Cross Street/ Redstone Hill	EB LEFT	114	92	174	X	125	100	190	18	0	18	143	11	0	11	201	3	3	6	106	110
	EB THRU	71	80	138	X	80	90	150	0	0	0	80	0	0	0	150	0	0	0	90	0
	EB RIGHT	41	35	49	X	45	40	55	18	24	42	87	11	27	38	93	3	42	45	85	105
Cross Street/ Redstone Hill	WB LEFT	60	80	100	X	65	90	110	0	31	31	96	0	39	39	149	0	51	51	141	25
	WB THRU	127	73	107	X	140	80	120	0	0	0	140	0	0	0	120	0	0	0	80	0
	WB RIGHT	13	90	100	X	15	100	110	0	0	0	15	0	0	0	110	0	3	3	103	10
Middle St	NB LEFT	6	23	36	X	10	25	40	20	8	28	38	34	19	53	93	47	2	49	74	105
	NB THRU	540	472	890	X	595	520	980	469	25	494	1089	519	40	559	1539	677	55	732	1252	700
	NB RIGHT	42	48	82	X	45	55	90	32	0	32	77	43	0	43	133	56	0	56	111	25
Middle St	SB LEFT	294	115	172	X	325	125	190	0	0	0	325	0	0	0	190	1	0	1	126	10
	SB THRU	840	560	600	X	925	615	660	43	486	529	1454	29	573	602	1262	82	725	807	1422	700
	SB RIGHT	81	70	53	X	90	75	60	0	8	8	98	0	19	19	79	1	2	3	78	110

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	Movement	Middle Street at Enterprise Drive North AM	MD Sat	PM	Middle Street at Enterprise Drive North AM	MD Sat	PM	Middle Street at Enterprise Drive North Origin	Destination	Total	2041 Middle Street at Enterprise Drive North 2041 AM	Middle Street at Enterprise Drive North Origin	Destination	Total	2041 Middle Street at Enterprise Drive North 2041 PM	Middle Street at Enterprise Drive North Origin	Destination	Total	2041 Middle Street at Enterprise Drive North 2041Sat	2041 Origin
Middle Street at Enterprise Drive	EB LEFT	75	88	165	85	95	180	0	0	0	85	0	0	0	180	0	0	0	95	0
	EB THRU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB RIGHT	47	78	60	50	85	65	0	0	0	50	0	0	0	65	0	0	0	85	0
Middle Street at Enterprise Drive	WB LEFT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB THRU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Middle St	NB LEFT	47	45	81	50	50	90	0	0	0	50	0	0	0	90	0	0	0	50	0
	NB THRU	530	470	844	585	515	930	452	92	544	1129	523	133	656	1586	687	147	834	1349	830
	NB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Middle St	SB LEFT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SB THRU	815	540	650	895	595	715	128	484	612	1507	112	565	677	1392	178	728	906	1501	830
	SB RIGHT	185	85	41	205	95	45	0	0	0	205	0	0	0	45	0	0	0	95	0

29

	Movement	Middle Street at Driveway/ Ronzo Road AM	MD Sat	PM	Middle Street at Driveway/ Ronzo Road AM	MD Sat	PM	Middle Street at Driveway/ Ronzo Road Origin	Destination	Total	2041 Middle Street at Driveway/ Ronzo Road 2041 AM	Middle Street at Driveway/ Ronzo Road Origin	Destination	Total	2041 Middle Street at Driveway/ Ronzo Road 2041 PM	Middle Street at Driveway/ Ronzo Road Origin	Destination	Total	2041 Middle Street at Driveway/ Ronzo Road 2041Sat	2041 Origin

Driveway/ Ronzo Road	EB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Driveway/ Ronzo Road	WB LEFT	242	123	250	X	265	135	275	0	80	80	345	0	73	73	348	0	120	120	255	65			
	WB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	WB RIGHT	41	33	79	X	45	35	85	0	0	0	45	0	0	0	85	0	0	0	35	0			
Middle St	NB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	NB THRU	550	568	846	X	605	625	930	452	92	544	1149	523	133	656	1586	687	147	834	1459	830			
	NB RIGHT	150	125	320	X	165	140	350	62	0	62	227	63	0	63	413	89	0	89	229	65			
Middle St	SB LEFT	68	56	48	X	75	60	55	0	0	0	75	0	0	0	55	0	0	0	60	0			
	SB THRU	730	560	700	X	805	615	770	128	484	612	1417	112	565	677	1447	178	728	906	1521	830			
	SB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
30		Middle Street at Enterprise Drive South				Middle Street at Enterprise Drive South			Middle Street at Enterprise Drive South		2041	Middle Street at Enterprise Drive South	Middle Street at Enterprise Drive South		2041	Middle Street at Enterprise Drive South	Middle Street at Enterprise Drive South		2041	Middle Street at Enterprise Drive South	2041			
		AM	MD Sat	PM		AM	MD Sat	PM	Origin	Destination	Total	2041 AM	Origin	Destination	Total	2041 PM	Origin	Destination	Total	2041Sat	Origin			
Enterprise Drive South	EB LEFT	9	14	26	X	10	15	30	38	0	38	48	17	0	17	47	0	0	0	15	50			
	EB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	EB RIGHT	80	50	88	X	90	55	95	38	0	38	128	17	0	17	112	0	0	0	55	50			
Enterprise Drive South	WB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	WB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	WB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Middle St	NB LEFT	200	53	100	X	220	60	110	0	11	11	231	0	37	37	147	0	0	0	60	50			
	NB THRU	690	680	1140	X	760	750	1255	477	92	569	1329	569	133	702	1957	775	147	922	1672	845			
	NB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Middle St	SB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	SB THRU	940	680	840	X	1035	750	925	128	552	680	1715	112	600	712	1637	178	849	1027	1777	845			
	SB RIGHT	33	9	33	X	35	10	35	0	11	11	46	0	37	37	72	0	0	0	10	50			
31		Middle Street at ESPN Drive				Middle Street at ESPN Drive			Middle Street at ESPN Drive		2041	Middle Street at ESPN Drive	Middle Street at ESPN Drive		2041	Middle Street at ESPN Drive	Middle Street at ESPN Drive		2041	Middle Street at ESPN Drive	2041			
		AM	MD Sat	PM		AM	MD Sat	PM	Origin	Destination	Total	2041 AM	Origin	Destination	Total	2041 PM	Origin	Destination	Total	2041Sat	Origin			
ESPN Drive	EB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	EB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	EB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	WB LEFT	10	26	82	X	10	30	90	0	0	0	10	0	0	0	90	0	0	0	30	0			
	WB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	WB RIGHT	45	24	120	X	50	25	130	0	0	0	50	0	0	0	130	0	0	0	25	0			
Middle St	NB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	NB THRU	810	708	1120	X	890	780	1230	477	103	580	1470	569	170	739	1969	775	147	922	1702	895			
	NB RIGHT	34	28	30	X	35	30	35	0	0	0	35	0	0	0	35	0	0	0	30	0			
Middle St	SB LEFT	90	23	23	X	100	25	25	0	0	0	100	0	0	0	25	0	0	0	25	0			
	SB THRU	950	730	960	X	1045	805	1055	166	552	718	1763	129	600	729	1784	178	849	1027	1832	895			
	SB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
34		West Street at Private Drive/ Ridgeview Estates				West Street at Private Drive/ Ridgeview Estates			West Street at Private Drive/ Ridgeview Estates		2041	West Street at Private Drive/ Ridgeview	West Street at Private Drive/ Ridgeview Estates		2041	West Street at Private Drive/ Ridgeview	West Street at Private Drive/ Ridgeview Estates		2041	West Street at Private Drive/ Ridgeview	2041			
		AM	MD Sat	PM		AM	MD Sat	PM	Origin	Destination	Total	2041 AM	Origin	Destination	Total	2041 PM	Origin	Destination	Total	2041Sat	Origin			
Private Drive/ Ridgeview	EB LEFT	5	11	20	X	5	15	20	67	0	67	72	72	0	72	92	93	0	93	108	100			
	EB THRU	0	7	0	X	0	10	0	0	0	0	0	0	0	0	0	0	0	0	10	0			
	EB RIGHT	7	6	4	X	10	10	5	67	0	67	77	72	0	72	77	93	0	93	103	100			
Private Drive/ Ridgeview	WB LEFT	18	41	18	X	20	45	20	0	0	0	20	0	0	0	20	0	0	0	45	0			
	WB THRU	0	8	0	X	0	10	0	0	0	0	0	0	0	0	0	0	0	0	10	0			
	WB RIGHT	0	6	4	X	0	10	5	0	0	0	0	0	0	0	5	0	0	0	10	0			
West St	NB LEFT	21	16	37	X	25	20	40	0	59	59	84	0	74	74	114	0	90	90	110	100			
	NB THRU	860	719	1130	X	945	790	1245	477	44	521	1466	569	96	665	1910	775	57	832	1622	795			
	NB RIGHT	2	57	24	X	5	65	25	0	0	0	5	0	0	0	25	0	0	0	65	0			
West St	SB LEFT	2	9	28	X	5	10	30	0	0	0	5	0	0	0	30	0	0	0	10	0			
	SB THRU	930	730	980	X	1025	805	1080	99	552	651	1676	57	600	657	1737	85	849	934	1739	795			
	SB RIGHT	34	16	30	X	35	20	35	0	59	59	94	0	74	74	109	0	90	90	110	100			
35		West Street at West Queen Street				West Street at West Queen Street			West Street at West Queen Street		2041	West Street at West Queen Street	West Street at West Queen Street		2041	West Street at West Queen Street	West Street at West Queen Street		2041	West Street at West Queen Street	2041			
		AM	MD Sat	PM		AM	MD Sat	PM	Origin	Destination	Total	2041 AM	Origin	Destination	Total	2041 PM	Origin	Destination	Total	2041Sat	Origin			
W Queen St	EB LEFT	79	132	157	X	85	145	175	6	6	12	97	2	18	20	195	0	10	10	155	110			
	EB THRU	90	22	6	X	100	25	10	0	0	0	100	0	0	0	10	0	0	0	25	0			
	EB RIGHT	32	105	115	X	35	115	125	6	0	6	41	2	0	2	127	0	0	0	115	50			
W Queen St	WB LEFT	46	23	86	X	50	25	95	206	0	206	256	322	0	322	417	430	0	430	455	75			
	WB THRU	11	25	116	X	15	30	130	0	0	0	15	0	0	0	130	0	0	0	30	0			

West St	WB RIGHT	3	20	73	X	5	20	80	280	18	298	303	417	33	450	530	534	28	562	582	205
West St	NB LEFT	180	29	60	X	200	30	65	0	2	2	202	0	6	6	71	0	0	0	30	50
	NB THRU	800	557	960	X	880	615	1055	191	79	270	1150	150	117	267	1322	241	107	348	963	580
	NB RIGHT	50	84	170	X	55	90	185	0	228	228	283	0	288	288	473	0	378	378	468	75
West St	SB LEFT	116	138	129	X	130	150	140	33	293	326	456	22	407	429	569	34	462	496	646	205
	SB THRU	820	620	850	X	900	680	935	115	257	372	1272	95	187	282	1217	129	387	516	1196	580
	SB RIGHT	23	16	12	X	25	20	15	19	2	21	46	7	6	13	28	15	0	15	35	110

36	West Street at Welch Road				West Street at Welch Road			West Street at Welch Road		2041	West Street at Welch Road	West Street at Welch Road		2041	West Street at Welch Road	West Street at Welch Road		2041	West Street at Welch Road	2041
	AM	MD Sat	PM		AM	MD Sat	PM	Origin	Destination	Total	2041 AM	Origin	Destination	Total	2041 PM	Origin	Destination	Total	2041Sat	Origin
	EB LEFT	32	30	30	X	35	35	35	0	0	0	35	0	0	0	35	0	0	0	35	0	0
Welch Road	EB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB RIGHT	123	45	60	X	135	50	66	0	0	0	135	0	0	0	66	0	0	0	50	0	0
	WB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Welch Road	WB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
West St	NB LEFT	61	38	100	X	65	40	110	0	0	0	65	0	0	0	110	0	0	0	40	0	0
	NB THRU	1025	640	1160	X	1130	705	1275	191	309	500	1630	150	411	561	1836	241	485	726	1431	705	0
	NB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
West St	SB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SB THRU	870	720	950	X	955	790	1045	327	257	584	1539	419	187	606	1651	559	387	946	1736	705	0
	SB RIGHT	31	33	110	X	35	35	120	0	0	0	35	0	0	0	120	0	0	0	35	0	0

38	West Street at Spring Street				West Street at Spring Street			West Street at Spring Street		2041	West Street at Spring Street	West Street at Spring Street		2041	West Street at Spring Street	West Street at Spring Street		2041	West Street at Spring Street	2041
	AM	MD Sat	PM		AM	MD Sat	PM	Origin	Destination	Total	2041 AM	Origin	Destination	Total	2041 PM	Origin	Destination	Total	2041Sat	Origin
	EB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB LEFT	30	49	42	X	35	55	45	47	0	47	82	0	0	0	45	0	0	0	55	60
Spring Street	WB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB RIGHT	26	62	58	X	30	70	65	32	24	56	86	0	27	27	92	0	42	42	112	45
West St	NB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NB THRU	1000	602	1200	X	1100	660	1320	159	285	444	1544	150	385	535	1855	241	443	684	1344	660
	NB RIGHT	31	55	50	X	35	60	55	0	146	146	181	0	83	83	138	0	200	200	260	60
West St	SB LEFT	76	74	133	X	85	80	145	20	97	117	202	34	55	89	234	47	133	180	260	45
	SB THRU	920	690	880	X	1010	760	970	307	160	467	1477	386	132	518	1488	512	254	766	1526	660
	SB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

41	West Street at Curtiss Street				West Street at Curtiss Street			West Street at Curtiss Street		2041	West Street at Curtiss Street	West Street at Curtiss Street		2041	West Street at Curtiss Street	West Street at Curtiss Street		2041	West Street at Curtiss Street	2041
	AM	MD Sat	PM		AM	MD Sat	PM	Origin	Destination	Total	2041 AM	Origin	Destination	Total	2041 PM	Origin	Destination	Total	2041Sat	Origin
	EB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB LEFT	12	33	97	X	15	35	105	70	0	70	85	108	0	108	213	204	0	204	239	160
Curtiss Street	WB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB RIGHT	29	46	74	X	30	50	80	61	48	109	139	100	53	153	233	186	84	270	320	150
West St	NB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NB THRU	960	611	1175	X	1055	670	1295	98	383	481	1536	50	414	464	1759	55	559	614	1284	570
	NB RIGHT	32	31	110	X	35	35	120	0	107	107	142	0	86	86	206	0	217	217	252	160
West St	SB LEFT	76	61	109	X	85	65	120	40	101	141	226	67	78	145	265	94	203	297	362	150
	SB THRU	890	680	810	X	980	750	890	314	59	373	1353	319	54	373	1263	419	51	470	1220	570
	SB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

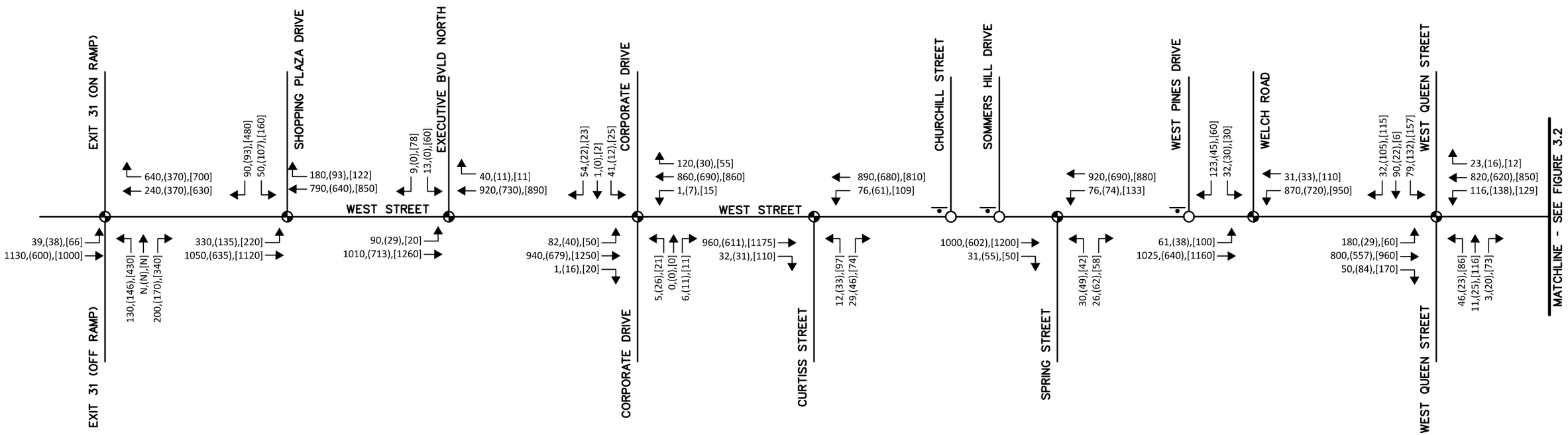
42	West Street at Corporate Drive/ Centrion Plaza Drive				West Street at Corporate Drive/ Centrion Plaza Drive			West Street at Corporate Drive/ Centrion Plaza Drive		2041	West Street at Corporate Drive/ Centrion Plaza	West Street at Corporate Drive/ Centrion Plaza Drive		2041	West Street at Corporate Drive/ Centrion Plaza	West Street at Corporate Drive/ Centrion Plaza Drive		2041	West Street at Corporate Drive/ Centrion Plaza	2041
	AM	MD Sat	PM		AM	MD Sat	PM	Origin	Destination	Total	2041 AM	Origin	Destination	Total	2041 PM	Origin	Destination	Total	2041Sat	Origin
	EB LEFT	41	12	25	X	45	15	30	50	4	54	99	34	10	44	74	38	4	42	57	75
Drive/ Centrion Plaza Drive	EB THRU	1	0	2	X	5	0	5	0	0	0	5	0	0	0	5	0	0	0	0	0
	EB RIGHT	54	22	23	X	60	25	25	50	0	50	110	34	0	34	59	38	0	38	63	50
	WB LEFT	5	26	21	X	5	30	25	0	0	0	5	0	0	0	25	0	0	0	30	0
Dr / Centrion Plaza Dr	WB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB RIGHT	6	11	11	X	10	15	15	0	4	4	14	0	10	10	25	0	4	4	19	25
West St	NB LEFT	82	40	50	X	90	45	55	0	30	30	120	0	36	36	91	0	35	35	80	50
	NB THRU	940	679	1250	X	1035	745	1375	48	483	531	1566	16	482	498	1873	17	768	785	1530	630
	NB RIGHT	1	16	20	X	5	20	20	0	0	0	5	0	0	0	20	0	0	0	20	0
St	SB LEFT	1	7	15	X	5	10	15	10	0	10	15	5	0	5	20	7	0	7	17	25

West	SB THRU	860	690	860	X	945	760	945	364	29	393	1338	420	18	438	1383	609	16	625	1385	630
	SB RIGHT	120	30	55	X	130	35	60	10	30	40	170	5	36	41	101	7	35	42	77	75
43		West Street at Executive Boulevard North				West Street at Executive Boulevard North			West Street at Executive Boulevard North		2041	West Street at Executive Boulevard North	West Street at Executive Boulevard North		2041	West Street at Executive Boulevard North	West Street at Executive Boulevard North		2041	West Street at Executive Boulevard North	2041
		AM	MD Sat	PM		AM	MD Sat	PM	Origin	Destination	Total	2041 AM	Origin	Destination	Total	2041 PM	Origin	Destination	Total	2041Sat	Origin
Executive	EB LEFT	9	0	60	X	10	0	65	48	11	59	69	16	13	29	94	17	18	35	35	60
Blvrd	EB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North	EB RIGHT	13	0	78	X	15	0	85	48	0	48	63	16	0	16	101	17	0	17	17	50
	WB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
West St	NB LEFT	90	29	20	X	100	30	20	0	29	29	129	0	18	18	38	0	16	16	46	50
	NB THRU	1010	713	1260	X	1110	785	1385	0	502	502	1612	0	505	505	1890	0	785	785	1570	620
	NB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
West St	SB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SB THRU	920	730	890	X	1010	805	980	402	0	402	1412	441	0	441	1421	628	0	628	1433	620
	SB RIGHT	40	11	11	X	45	15	15	12	29	41	86	14	18	32	47	19	16	35	50	60
44		West Street at Executive Boulevard South				West Street at Executive Boulevard South			West Street at Executive Boulevard South		2041	West Street at Executive Boulevard South	West Street at Executive Boulevard South		2041	West Street at Executive Boulevard South	West Street at Executive Boulevard South		2041	West Street at Executive Boulevard South	2041
		AM	MD Sat	PM		AM	MD Sat	PM	Origin	Destination	Total	2041 AM	Origin	Destination	Total	2041 PM	Origin	Destination	Total	2041Sat	Origin
Executive	EB LEFT	50	107	160	X	55	120	175	0	1	1	56	0	2	2	177	0	0	0	120	10
Blvrd	EB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South	EB RIGHT	90	93	480	X	100	100	530	0	0	0	100	0	0	0	530	0	0	0	100	0
	WB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
West St	NB LEFT	330	135	220	X	365	150	240	0	0	0	365	0	0	0	240	0	0	0	150	0
	NB THRU	1050	635	1120	X	1155	700	1230	0	531	531	1686	0	521	521	1751	0	801	801	1501	660
	NB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
West St	SB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SB THRU	790	640	850	X	870	705	935	448	0	448	1318	456	0	456	1391	645	0	645	1350	660
	SB RIGHT	180	93	122	X	200	100	135	2	0	2	202	1	0	1	136	0	0	0	100	10
45		West Street at I-84 WB On Ramp/ I-84 WB Off Ramp				West Street at I-84 WB On Ramp/ I-84 WB Off Ramp			West Street at I-84 WB On Ramp/ I-84 WB Off Ramp		2041	West Street at I-84 WB On Ramp/ I-84 WB	West Street at I-84 WB On Ramp/ I-84 WB Off Ramp		2041	West Street at I-84 WB On Ramp/ I-84 WB	West Street at I-84 WB On Ramp/ I-84 WB Off Ramp		2041	West Street at I-84 WB On Ramp/ I-84 WB	2041
		AM	MD Sat	PM		AM	MD Sat	PM	Origin	Destination	Total	2041 AM	Origin	Destination	Total	2041 PM	Origin	Destination	Total	2041Sat	Origin
	EB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
On Ramp/	WB LEFT	130	146	430	X	145	160	475	0	0	0	145	0	0	0	475	0	0	0	160	0
I-84 WB	WB THRU	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Off Ramp	WB RIGHT	200	170	340	X	220	185	375	0	267	267	487	0	259	259	634	0	398	398	583	330
West St	NB LEFT	39	38	66	X	45	40	75	0	0	0	45	0	0	0	75	0	0	0	40	0
	NB THRU	1130	600	1000	X	1245	660	1100	0	267	267	1512	0	259	259	1359	0	398	398	1058	330
	NB RIGHT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
West St	SB LEFT	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SB THRU	240	370	630	X	265	405	695	224	0	224	489	226	0	226	921	323	0	323	728	330
	SB RIGHT	640	370	700	X	705	405	770	224	0	224	929	226	0	226	996	323	0	323	728	330

LEGEND

- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION
- STOP CONTROL APPROACH

WEEKDAY AM: XXX
WEEKDAY MID-DAY: (XXX)
WEEKDAY PM: [XXX]



2/7/2021, PPADLO, G:\JOBS19\18\1901992\DWG\TFLO190199201.DWG,FIGURE 3.1.

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ADJUSTED EXISTING (2020) TRAFFIC VOLUMES

CT ROUTE 229 CORRIDOR STUDY
EXISTING CONDITIONS
BRISTOL/SOUTHINGTON, CONNECTICUT
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NOVEMBER 2020

FIGURE 3.1

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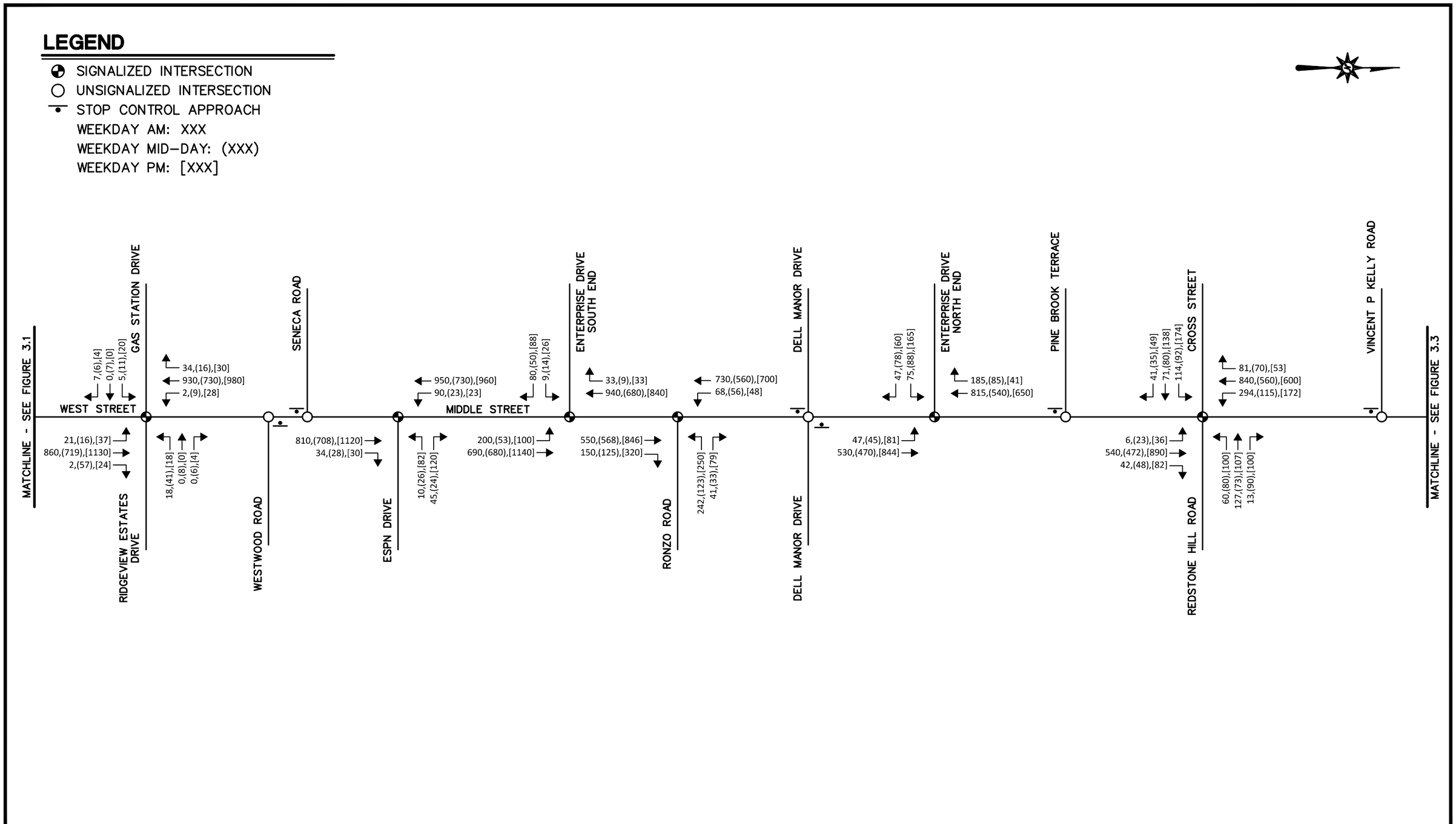

2/7/2021, PPADLO, G:\JOBS19\18\1901992\DWG\TFLO190199201.DWG,FIGURE 3.2.

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FIGURE 3.2

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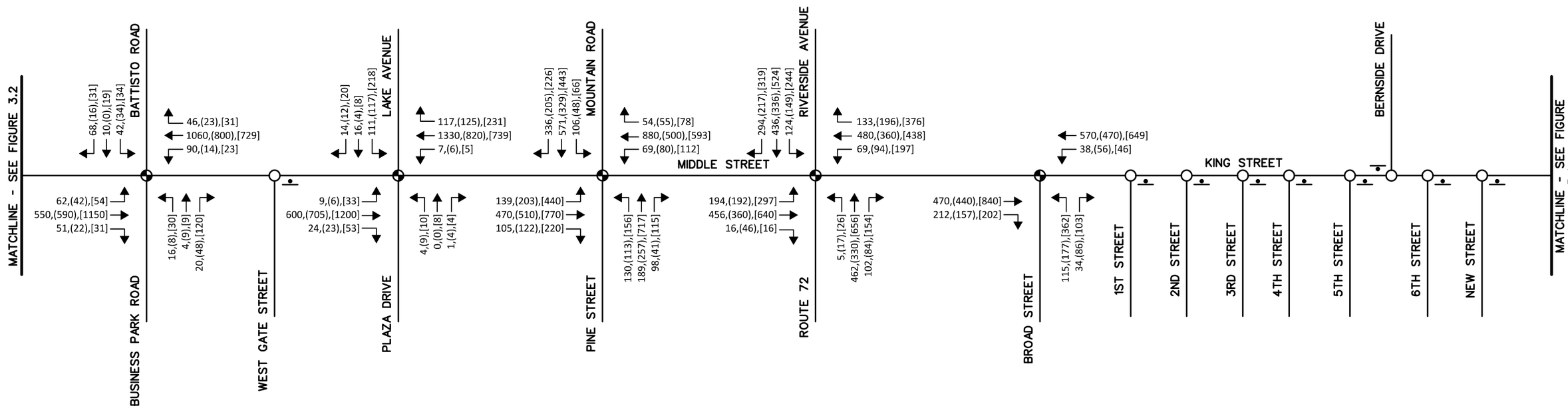
LEGEND

- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION
- STOP CONTROL APPROACH
  - INCOMING TRAFFIC: XX%
  - OUTGOING TRAFFIC: (XX%)

TRIP DISTRIBUTION AT SITE DRIVES PROVIDED BY CLIENT. ALL OTHER INTERSECTIONS USE PERCENTAGE BASED DISTRIBUTION AS NOTED.



2/7/2021, PPADLO, G:\JOBS19\18\1901992\DWG\TFLO190199201.DWG.FIGURE3.3.

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FIGURE 3.3

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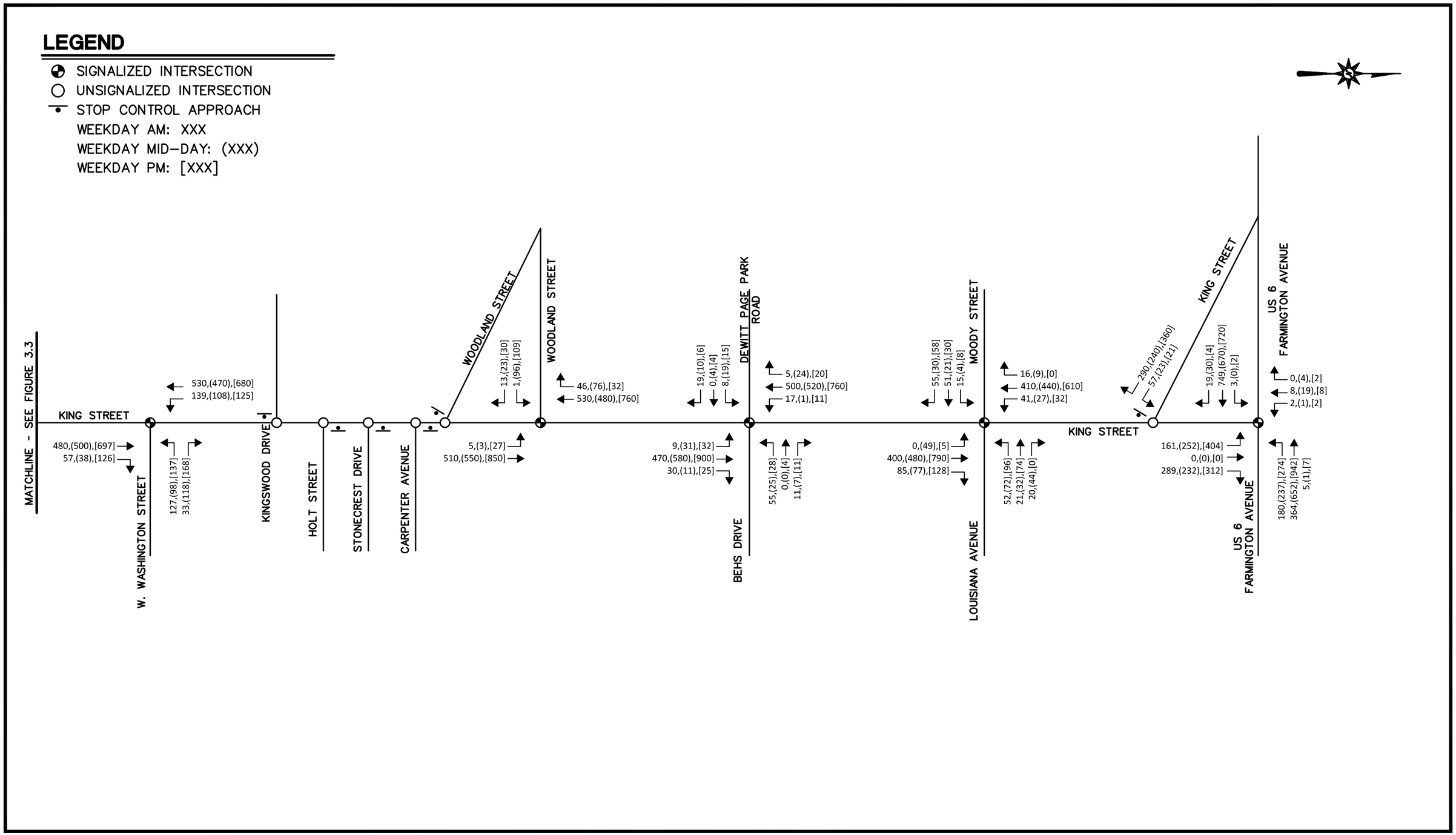

2/7/2021, PPADLO, G:\JOBS19\18\1901992\DWG\TFLO19019920I.DWG.FIGURE 3.4.

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FIGURE 3.4

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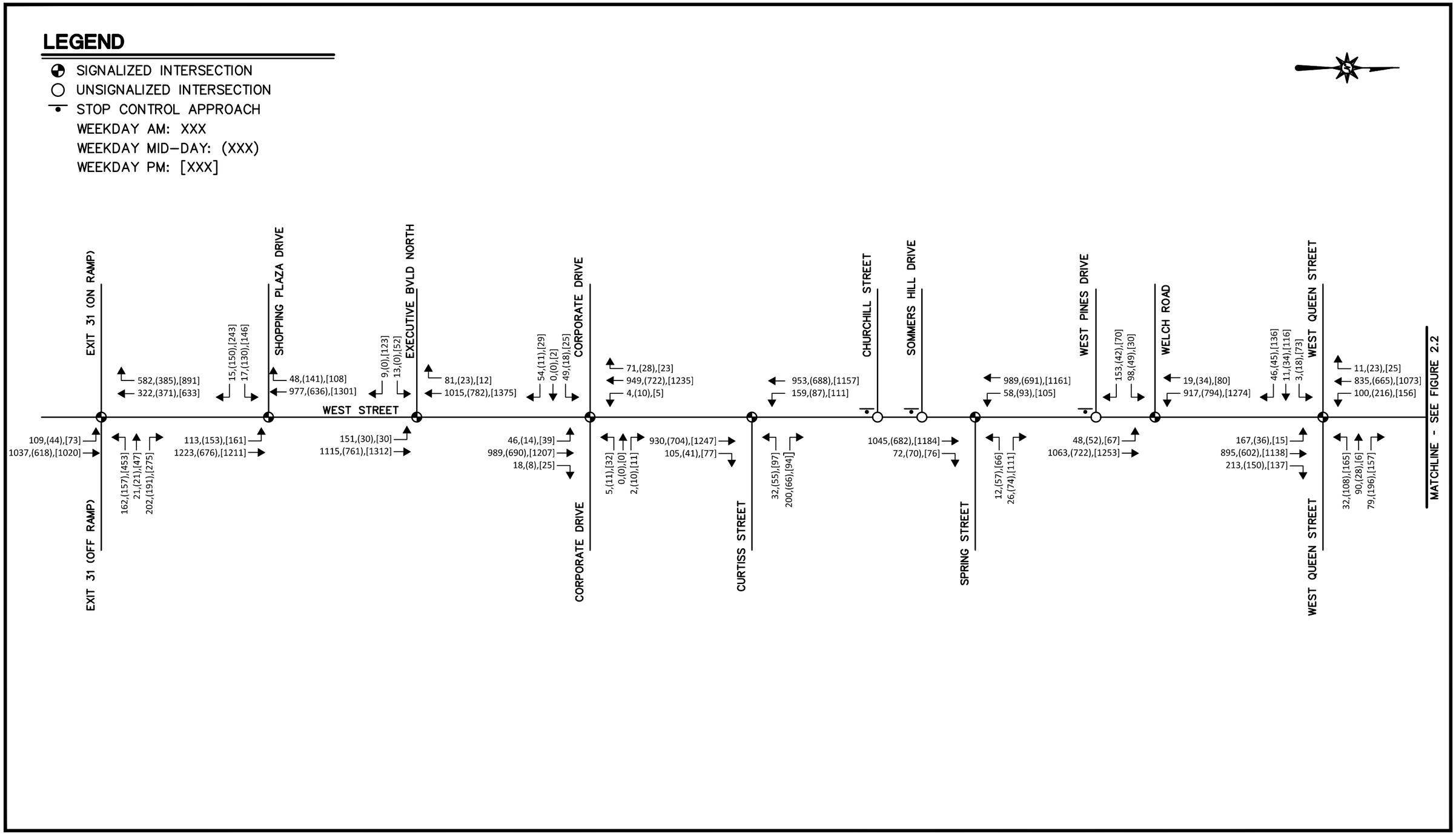

2/7/2021, PPADLO, G:\JOBS19\18\1901992\DWG\TFLO190199201.DWG,FIGURE 2.1.

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FIGURE 2.1

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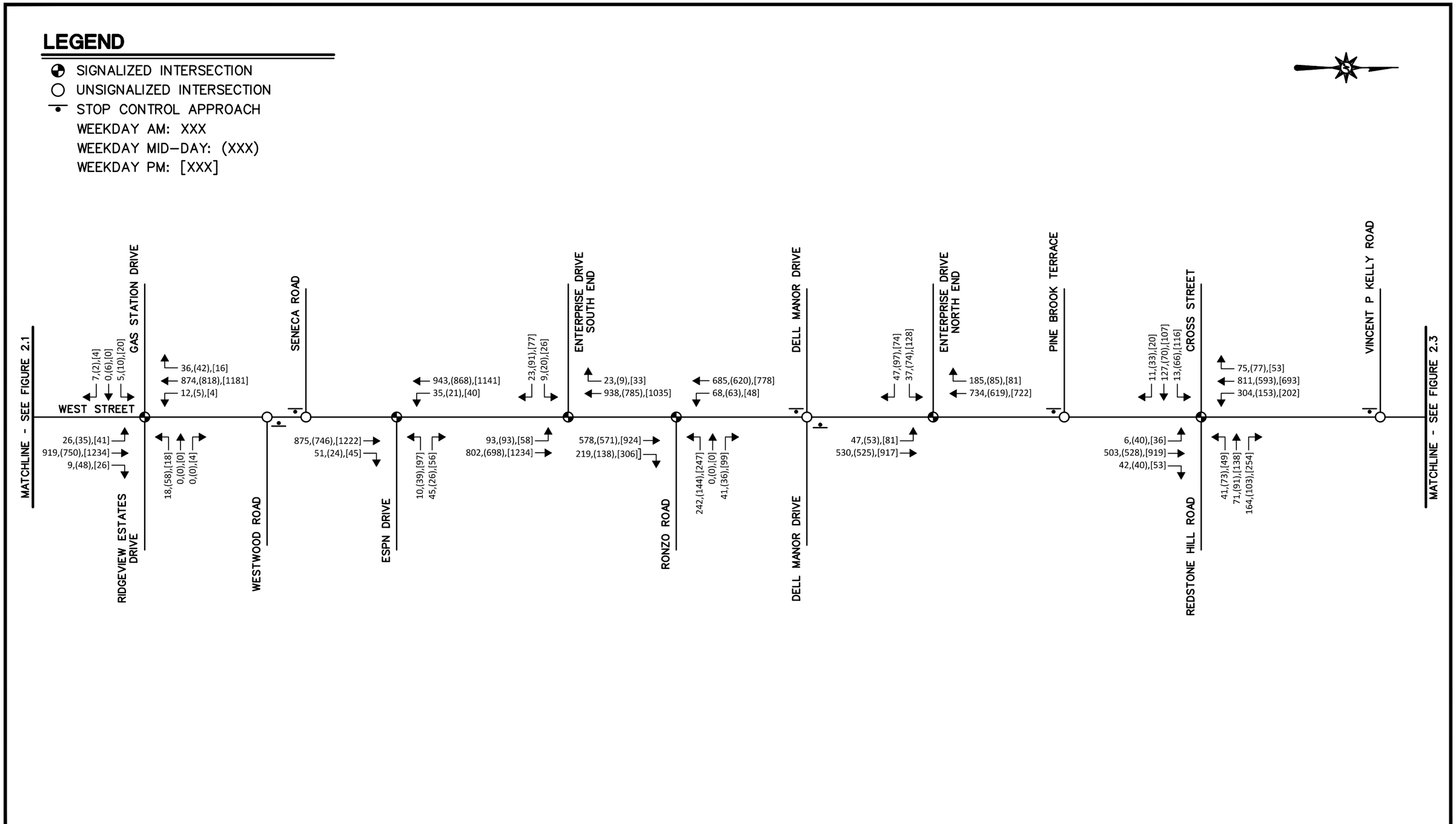

2/7/2021, PPADLO, G:\JOBS19\18\1901992\DWG\TFLO190199201.DWG,FIGURE 2.2.

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FIGURE 3

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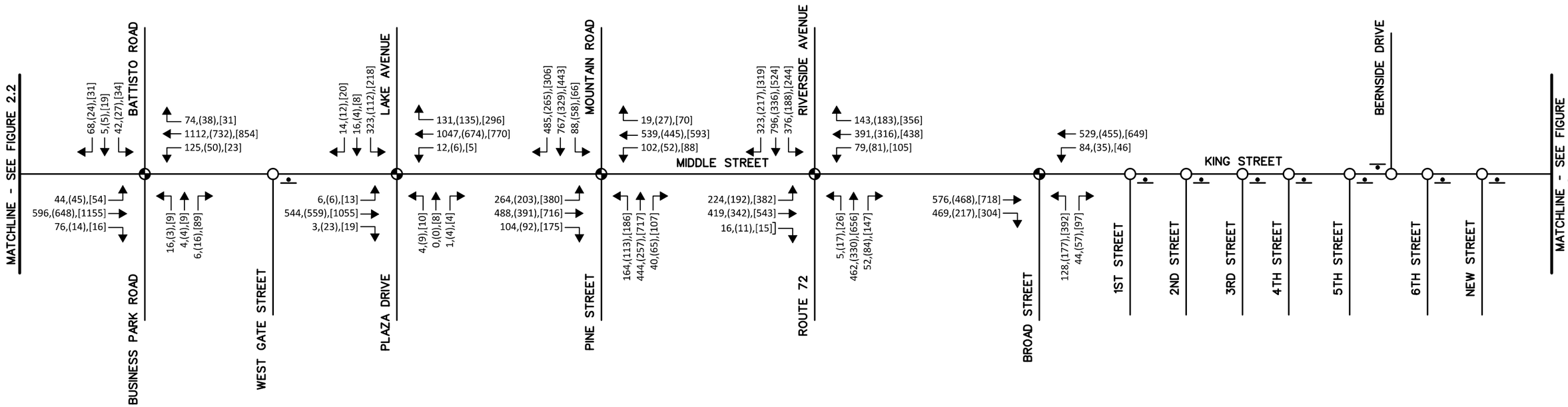
LEGEND

- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION
- STOP CONTROL APPROACH
  INCOMING TRAFFIC: XX%
  OUTGOING TRAFFIC: (XX%)

TRIP DISTRIBUTION AT SITE DRIVES PROVIDED BY CLIENT. ALL OTHER INTERSECTIONS USE PERCENTAGE BASED DISTRIBUTION AS NOTED.



2/7/2021, PPADLO, G:\JOBS19\18\1901992\DWG\TFLO190199201.DWG,FIGURE 2.3.

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FIGURE 4

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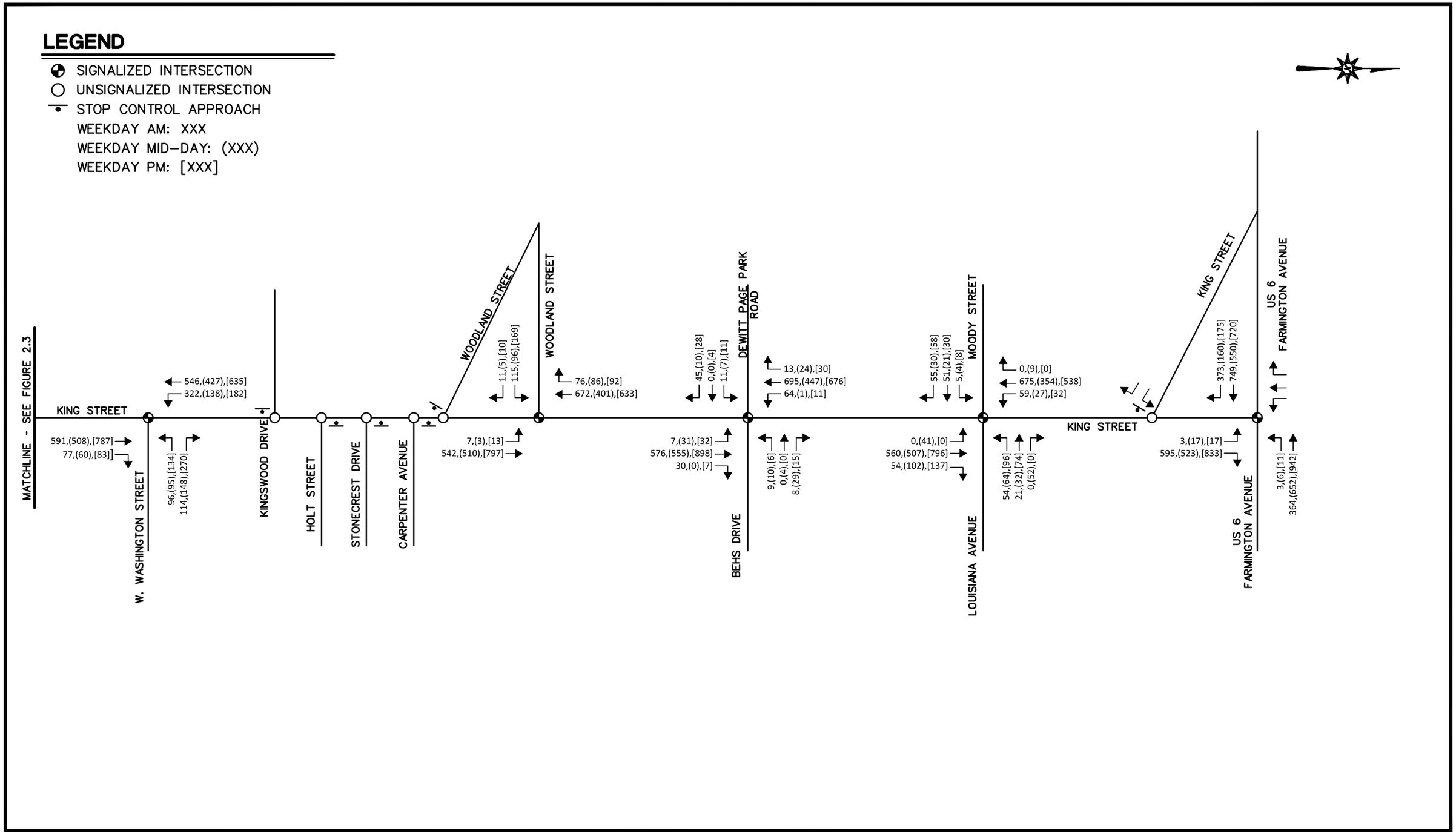

2/7/2021, PPADLO, G:\JOBS19\18\1901992\DWG\TFLO190199201.DWG,FIGURE 2.4.

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FIGURE 5

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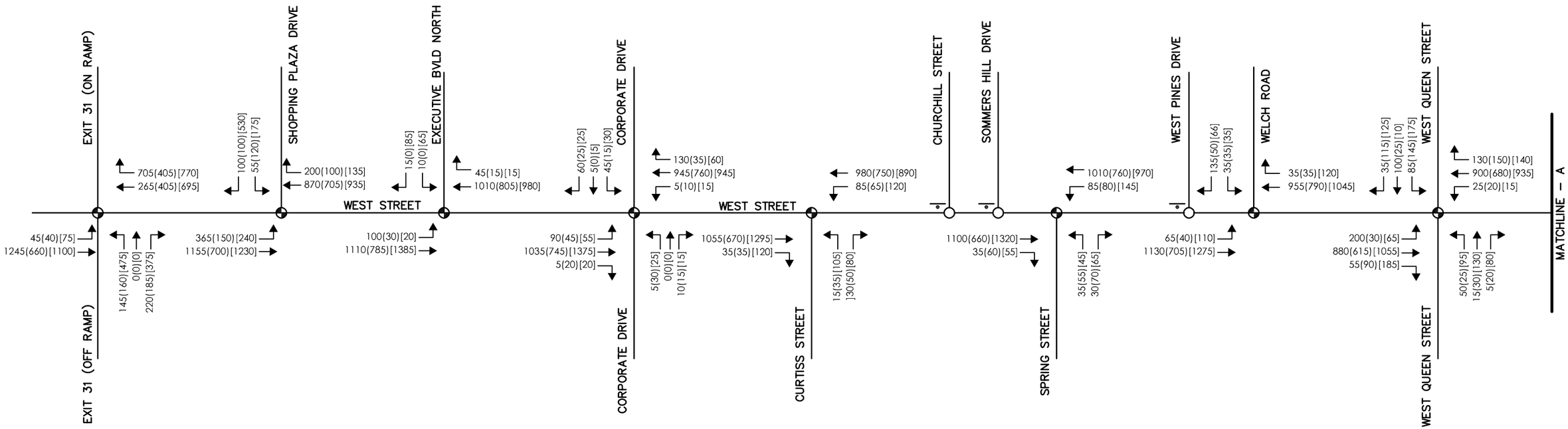
LEGEND

- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION
- STOP CONTROL APPROACH

WEEKDAY AM: XXX
WEEKDAY MID-DAY: (XXX)
WEEKDAY PM: [XXX]



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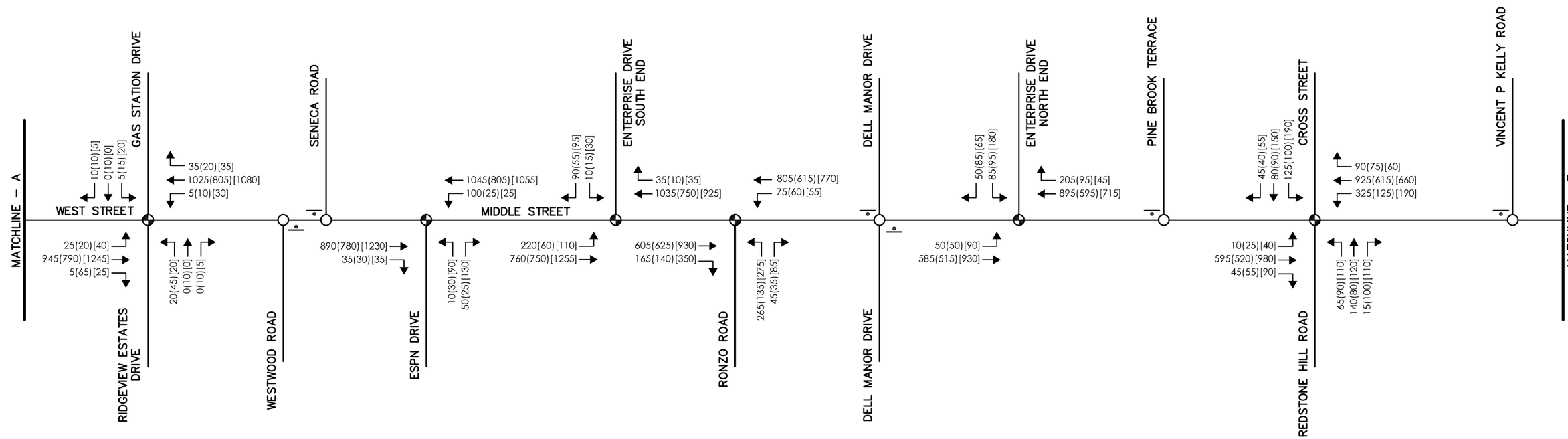
5/12/2022, PPADLO, G:\JOBS19\18\1901992\DWG\TFLO190199201.DWG,FIG 4.1.

LEGEND

- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION
- STOP CONTROL APPROACH

WEEKDAY AM: XXX
WEEKDAY MID-DAY: (XXX)
WEEKDAY PM: [XXX]



5/12/2022, PPADLO, G:\JOBS19\18\1901992\DWG\TFLO19019201.DWG,FIG4.2.

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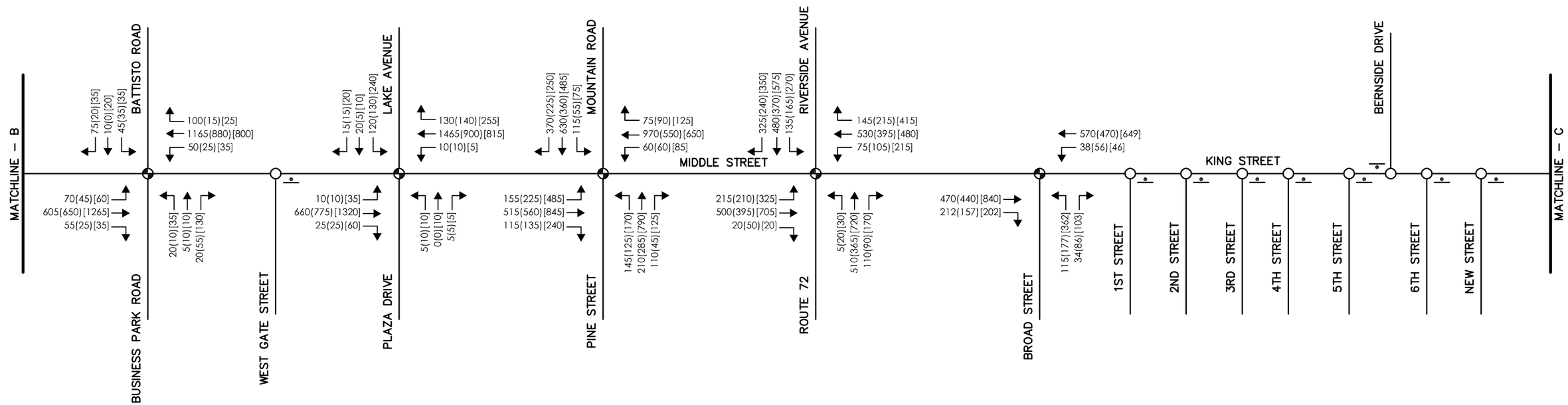
LEGEND

- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION
- STOP CONTROL APPROACH

WEEKDAY AM: XXX
WEEKDAY MID-DAY: (XXX)
WEEKDAY PM: [XXX]



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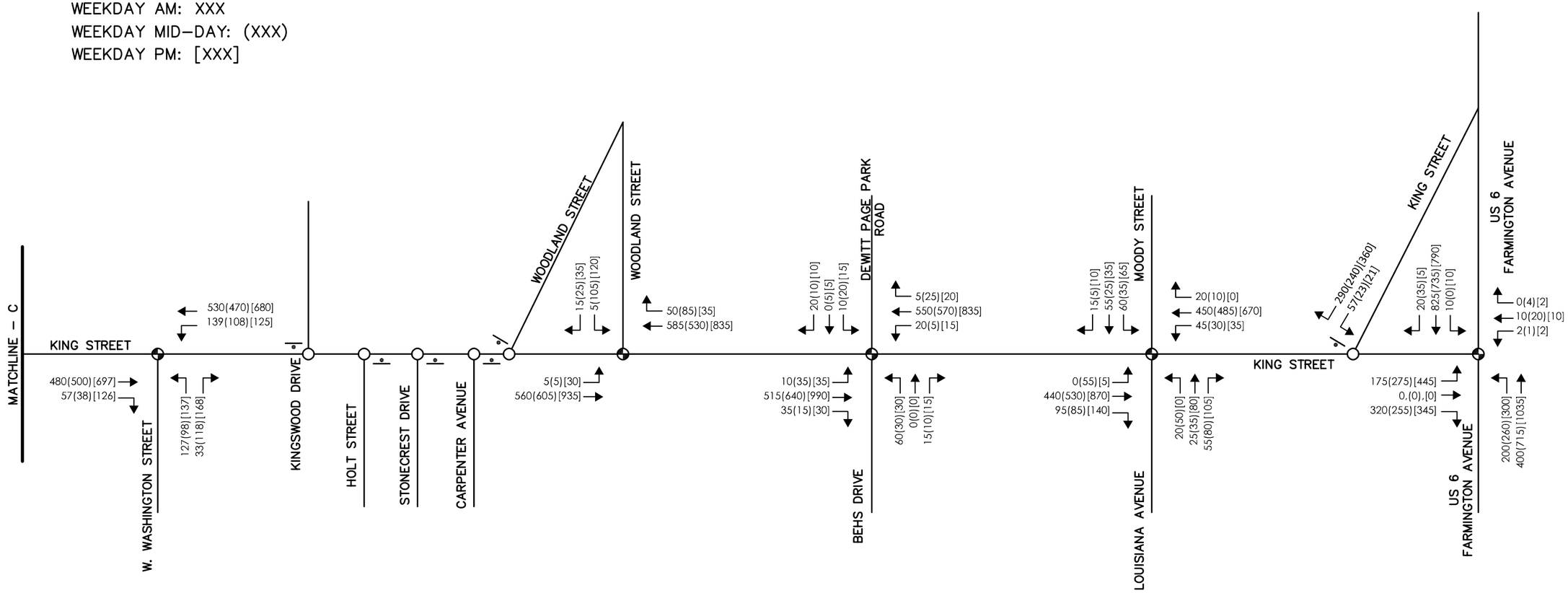
5/12/2022, PPADLO, G:\JOBS19\18\1901992\DWG\TFLO\19019920I.DWG,FIG.4.3.



5/12/2022, PPADLO, G:\JOBS19\18\1901992\DWG\TFLO19019920I.DWG,FIG4.4.

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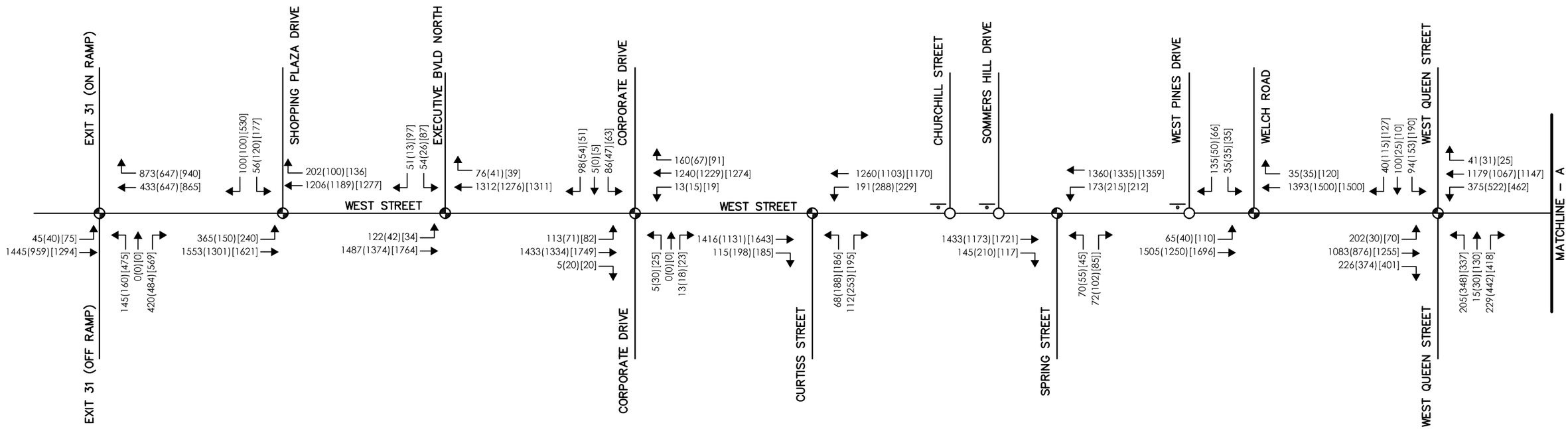
LEGEND

- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION
- STOP CONTROL APPROACH

WEEKDAY AM: XXX
WEEKDAY MID-DAY: (XXX)
WEEKDAY PM: [XXX]



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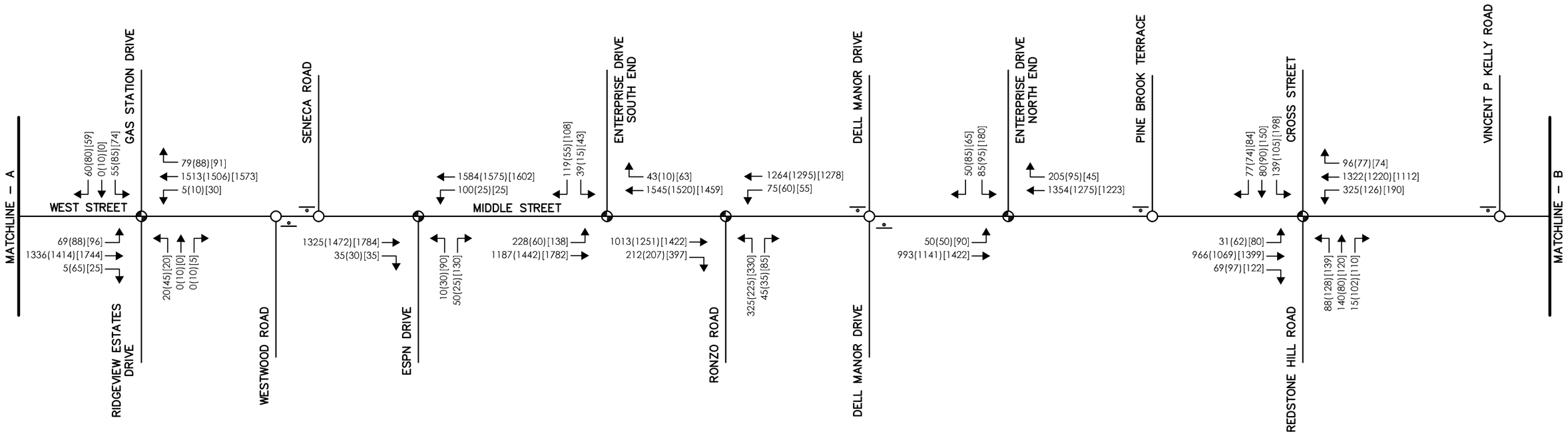
5/12/2022, PPADLO, G:\JOBS19\18\1901992\DWG\TFLO\190199201.DWG,FIG 5.1.

LEGEND

- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION
- STOP CONTROL APPROACH

WEEKDAY AM: XXX
WEEKDAY MID-DAY: (XXX)
WEEKDAY PM: [XXX]



5/12/2022, PPADLO, G:\JOBS19\18\1901992\DWG\TFLO1901992O1.DWG,FIG5.2.

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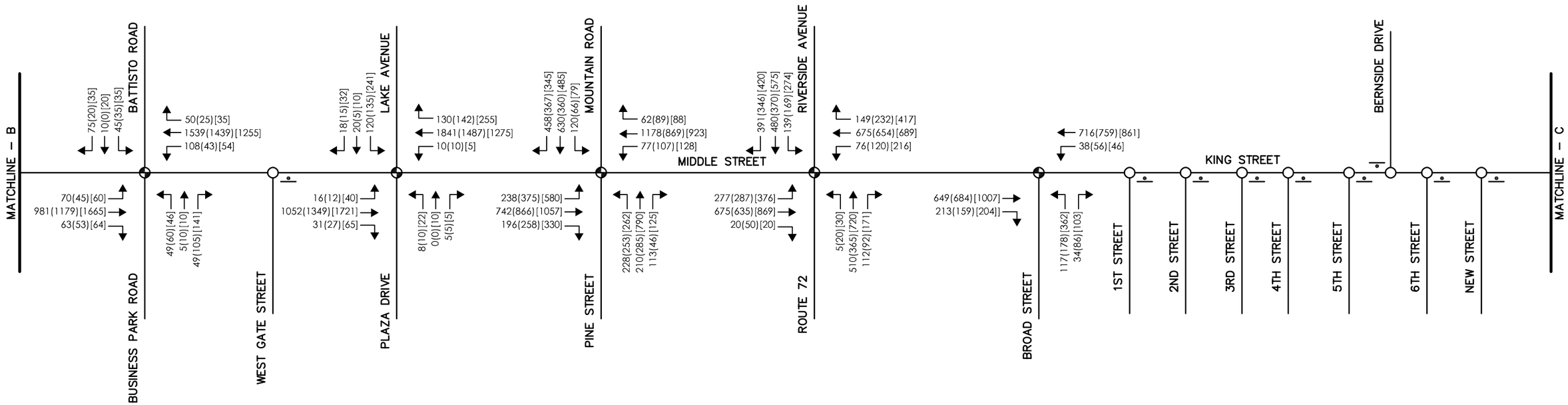
LEGEND

- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION
- STOP CONTROL APPROACH

WEEKDAY AM: XXX
WEEKDAY MID-DAY: (XXX)
WEEKDAY PM: [XXX]



5/12/2022, PPADLO, G:\JOBS19\18\1901992\DWG\TFLO190199201.DWG,FIG5.3.

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BUILD (2041) TRAFFIC VOLUMES
CT ROUTE 229 CORRIDOR STUDY

NAUGATUCK VALLEY COUNCIL OF GOVERNMENTS

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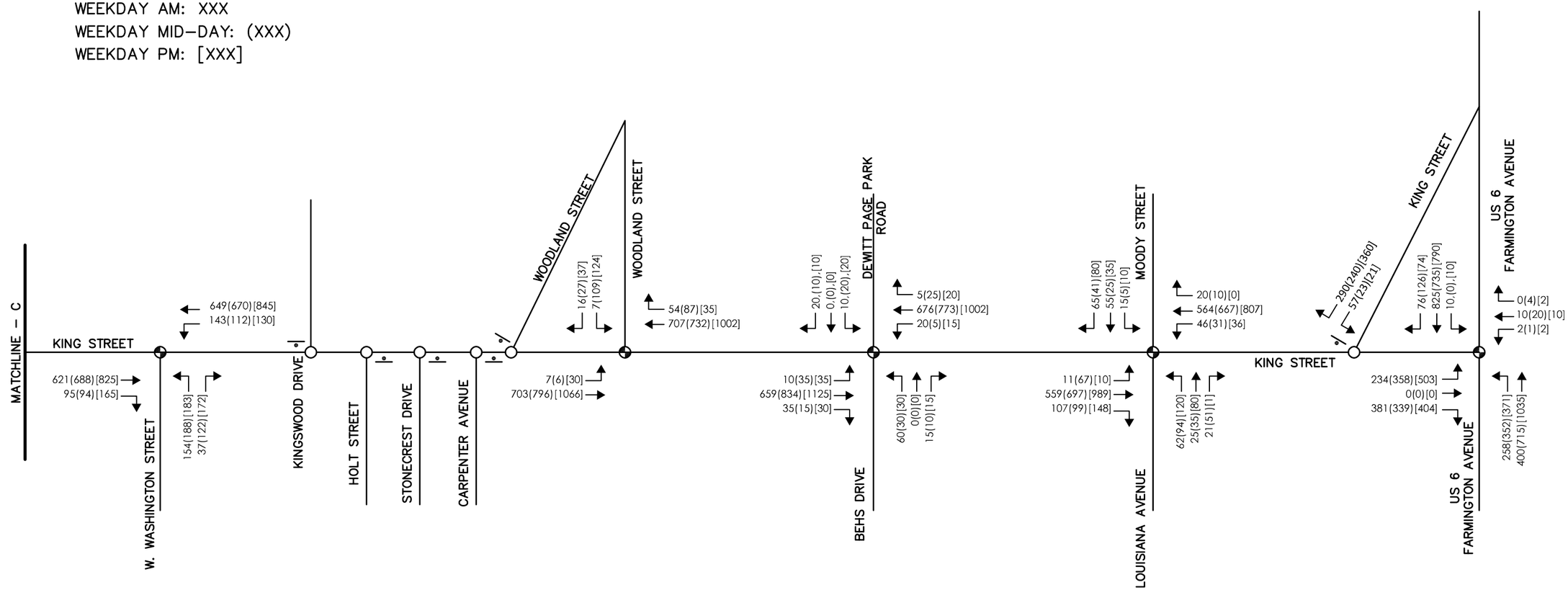

5/12/2022, PPADLO, G:\JOBS19\18\1901992\DWG\TFLO190199201.DWG,FIG5.4.

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Appendix B Synchro Capacity Analysis

Traffic Operations Summary - Synchro Intersection Results

Table 1: Traffic Operations: Signalized Intersection – Level of Service

		AM			Mid-day			PM		
		2020 Existing	2040 No Build	2040 Build	2020 Existing	2040 No Build	2040 Build	2020 Existing	2040 No Build	2040 Build
King Street Northern Segment	**Route 229/Driveway at Route 6**	**B/12.9**	**B/14.3**	**B/16.0**	**B/17.4**	**B/19.4**	**C/22.7**	**C/22.0**	**C/30.6**	**D/41.1**
	Route 6 EB Left/ Thru/ Right	B/0.44/225	B/0.49/255	B/0.49/245	B/0.40/220	B/0.45/245	B/0.45/235	B/0.50/235	C/0.56/265	B/0.49/265
	Route 6 WB Left/ Thru/ Right	A/0.40/100	A/0.45/110	A/0.5/125	B/0.63/215	B/0.71/#255	B/0.81/#365	B/0.79/#515	C/0.95/#705	A/0.5/#810
	Route 229 NB Left	D/0.40/85	D/0.43/90	D/0.52/115	D/0.60/145	D/0.62/155	D/0.71/195	D/0.75/220	E/0.79/#245	D/0.52/#305
	Route 229 NB Thru	D/0.41/85	D/0.43/90	D/0.52/115	D/0.60/145	D/0.63/155	D/0.71/195	D/0.75/220	E/0.79/#245	D/0.52/#305
	Route 229 NB Right	B/0.59/100	B/0.67/130	C/0.75/#205	A/0.45/60	B/0.51/90	B/0.62/155	B/0.46/125	B/0.55/170	C/0.75/#255
	Route 229 SB Left/ Thru/ Right	D/0.09/25	D/0.14/30	D/0.15/30	D/0.25/40	D/0.3/50	D/0.32/50	D/0.14/30	D/0.23/35	D/0.15/35
King Street Northern Segment	**Route 229 at Moody Street/ Louisiana Avenue**	**A/9.7**	**B/10.9**	**B/10.2**	**B/12.3**	**B/13.8**	**B/10.8**	**B/18.6**	**C/23.7**	**C/22.1**
	Moody Street EB Left/ Thru/ Right	C/0.43/70	C/0.45/75	C/0.52/105	B/0.19/40	B/0.21/40	D/0.34/80	B/0.27/50	B/0.29/50	C/0.52/135
	Louisiana Avenue WB Left/ Thru/ Right	C/0.50/75	C/0.52/80	C/0.17/45	C/0.57/100	C/0.59/110	D/0.41/95	C/0.62/120	D/0.66/130	C/0.17/90
	Route 229 NB Left/ Thru/ Right	A/0.38/245	A/0.45/285	A/0.56/145	B/0.56/335	B/0.63/380	A/0.67/100	C/0.83/#645	C/0.93/#760	A/0.56/#995
	Route 229 SB Left/ Thru/ Right	A/0.38/145	A/0.46/170	A/0.46/220	A/0.42/170	A/0.48/210	A/0.52/245	B/0.61/320	B/0.69/#465	A/0.46/460
King Street Northern Segment	**Route 229 at Page Park Road/ Bristol Eastern High School**	**A/4.9**	**A/5.2**	**A/5.5**	**A/4.2**	**A/4.3**	**A/5.7**	**A/6.7**	**A/7.7**	**A/7.5**
	Page Park Road EB Left/ Thru/ Right	A/0.10/25	A/0.11/25	A/0.13/25	C/0.17/35	C/0.18/40	A/0.14/25	C/0.13/30	C/0.15/35	A/0.13/25
	Bristol Eastern High School WB Left/ Thru/ Right	A/0.25/25	A/0.28/25	B/0.35/50	A/0.12/25	A/0.15/25	A/0.19/25	C/0.22/45	A/0.17/25	B/0.35/45
	Route 229 NB Left/ Thru/ Right	A/0.40/70	A/0.44/80	A/0.53/90	A/0.46/105	A/0.52/120	A/0.61/220	A/0.71/#250	A/0.79/m#670	A/0.53/m225
	Route 229 SB Left/ Thru/ Right	A/0.41/200	A/0.45/195	A/0.52/95	A/0.39/45	A/0.43/55	A/0.57/110	A/0.57/80	A/0.63/90	A/0.52/m330
King Street Northern Segment	**Route 229 at Woodland Street**	**A/1.5**	**A/1.7**	**A/3.5**	**A/6.2**	**A/6.7**	**B/10.7**	**A/8.9**	**B/13.6**	**C/29.7**
	Woodland Street NB Left/ Thru	A/0.32/115	A/0.35/135	A/0.47/195	A/0.42/170	A/0.47/200	B/0.62/m360	B/0.70/#445	B/0.84/#660	A/0.47/#1020
	Woodland Street SB Thru/ Right	A/0.36/50	A/0.4/50	A/0.5/170	A/0.43/50	A/0.48/55	A/0.64/90	A/0.61/85	A/0.73/130	A/0.5/#815
	Woodland Street NE Left/ Right	B/0.06/25	B/0.08/25	B/0.1/25	C/0.44/90	C/0.47/95	D/0.57/125	0/0.50/100	C/0.53/110	B/0.1/145
King Street Northern Segment	**Route 229 at West Washington Street**	**C/24.3**	**C/33.6**	**C/24.5**	**B/19.6**	**C/24.7**	**C/31.6**	**D/38.4**	**D/52.4**	**E/70.7**
	West Washington Street WB Left/ Right	0/0.00/25	C/0.58/155	E//205	0/0.00/25	C/0.67/190	E/0.97/#370	0/0.00/25	D/0.82/275	E//#570
	Route 229 NB Thru/ Right	B/0.63/265	B/0.66/320	C//#510	B/0.65/290	B/0.67/355	C/0.93/#735	C/0.87/#780	D/0.98/#930	C//#1250
	Route 229 SB Left	F/1.04/#230	F/1.28/#255	E//#215	E/0.82/#185	F/1.01/#210	E/0.69/m#135	F/1.35/#235	F/1.55/#265	E//#230
	Route 229 SB Thru	A/0.46/165	A/0.49/205	A//300	A/0.41/165	A/0.45/200	A/0.59/215	B/0.58/375	B/0.65/470	A//525

		AM			Mid-day			PM		
		2020 Existing	2040 No Build	2040 Build	2020 Existing	2040 No Build	2040 Build	2020 Existing	2040 No Build	2040 Build
King Street Northern Segment	**Route 229 at Broad Street**	**A/8.7**	**A/8.6**	**A/9.5**	**B/13.0**	**B/13.4**	**A/9.2**	**B/14.8**	**B/16.8**	**B/18.9**
	Broad Street WB Left	D/0.45/70	D/0.47/75	D/0.48/75	D/0.49/75	D/0.51/80	D/0.56/95	D/0.72/165	D/0.74/180	D/0.48/215
	Broad Street WB Right	0/0.00/25	B/0.23/30	B/0.23/30	0/0.00/25	B/0.37/40	B/0.39/45	0/0.00/25	A/0.33/50	B/0.23/55
	Route 229 NB Thru	A/0.22/145	A/0.24/140	B/0.34/185	B/0.24/145	B/0.28/125	A/0.41/115	B/0.46/m300	B/0.53/m315	B/0.34/280
	Route 229 NB Right	A/0.18/25	A/0.2/25	A/0.2/25	A/0.14/25	A/0.16/25	A/0.16/m0	A/0.17/m0	A/0.19/m0	A/0.2/m25
	Route 229 SB Left	D/0.21/55	D/0.2/60	C/0.17/m40	C/0.27/60	C/0.26/60	D/0.2/m55	D/0.21/65	D/0.22/70	C/0.17/m55
	Route 229 SB Thru	A/0.21/50	A/0.23/60	A/0.29/145	A/0.19/45	A/0.21/55	A/0.31/m60	A/0.27/105	A/0.3/120	A/0.29/m185
Middle Street Central Segment	**Route 229 at Riverside Avenue/ Relocated Route 72**	**C/31.2**	**C/31.6**	**D/42.5**	**C/24.2**	**C/26.2**	**C/31.8**	**E/62.3**	**F/81.5**	**D/48.4**
	Riverside Avenue EB Left	D/0.47/75	D/0.49/80	E/0.64/95	D/0.45/65	D/0.48/70	E/0.78/#110	D/0.68/125	D/0.73/140	E/0.64/#180
	Riverside Avenue EB Through	D/0.81/375	D/0.8/420	E/0.88/#550	C/0.65/#290	C/0.71/#335	D/0.81/#360	E/0.98/#655	F/1.09/#740	E/0.88/#740
	Riverside Avenue EB Right	A/0.33/40	A/0.33/40	A/0.43/130	A/0.25/35	A/0.27/40	A/0.41/110	A/0.32/35	A/0.35/45	A/0.43/215
	Relocated Route 72 WB Left	D/0.05/25	D/0.05/25	E/0.06/25	C/0.12/30	C/0.15/30	D/0.19/40	D/0.24/45	D/0.27/50	E/0.06/60
	Relocated Route 72 WB Thru	D/0.71/185	D/0.68/210	D/0.71/245	D/0.65/120	C/0.61/135	D/0.6/145	E/0.94/#375	F/1.07/#425	D/0.71/#405
	Relocated Route 72 WB Right	A/0.17/25	A/0.17/25	A/0.17/35	A/0.15/25	A/0.15/25	A/0.15/25	A/0.19/30	A/0.21/35	A/0.17/40
	Route 229 NB Left	E/0.73/#260	D/0.71/#300	E/0.82/m#320	D/0.70/#185	D/0.75/#205	E/0.84/#325	D/0.78/270	D/0.81/300	E/0.82/m#445
	Route 229 NB Thru/ Right	C/0.41/210	C/0.49/235	D/0.59/255	C/0.41/145	C/0.5/#170	C/0.61/240	F/1.22/#415	F/1.34/#475	D/0.59/m#425
	Route 229 SB Left	D/0.28/85	D/0.32/90	D/0.27/115	C/0.32/75	C/0.36/90	D/0.45/#170	D/0.41/195	D/0.44/215	D/0.27/#335
	Route 229 SB Thru	C/0.43/205	C/0.57/235	D/0.63/#390	C/0.38/115	C/0.48/145	C/0.66/#295	D/0.59/#235	D/0.68/#275	D/0.63/#410
	Route 229 SB Right	A/0.18/35	A/0.22/55	A/0.21/70	A/0.26/30	A/0.31/75	A/0.33/90	C/0.57/280	C/0.65/325	A/0.21/230
Middle Street Central Segment	**Route 229 at Mountain Road/ Pine St**	**F/152.5**	**F/280.5**	**D/53.1**	**D/38.7**	**E/61.5**	**E/69.8**	**F/109.4**	**F/131.6**	**D/48.6**
	Mountain Road EB Left	C/0.25/120	C/0.25/130	B/0.24/80	C/0.16/65	C/0.17/75	D/0.31/105	C/0.35/95	C/0.44/100	B/0.24/80
	Mountain Road EB Thru/Right	D/0.86/#610	D/0.81/#710	D/0.92/#535	D/0.76/#335	D/0.73/#385	F/1.49/#635	D/0.68/#510	D/0.73/#580	D/0.92/#525
	Pine Street WB Left	D/0.73/#230	D/0.71/#265	F/1.03/#325	D/0.55/#160	D/0.56/#185	E/0.8/#535	D/0.57/#250	D/0.6/#305	F/1.03/#355
	Pine Street WB Thru/Right	C/0.26/140	C/0.25/155	B/0.25/100	D/0.38/170	D/0.36/185	D/0.44/235	D/0.71/#715	D/0.76/#810	B/0.25/#530
	Route 229 NB Left	C/0.31/170	C/0.37/185	C/0.37/230	B/0.40/185	C/0.42/205	B/0.39/205	D/0.85/#565	F/1.03/#680	C/0.37/300
	Route 229 NB Thru/ Right	D/0.52/345	D/0.71/385	D/0.79/465	C/0.48/300	C/0.6/340	B/0.59/315	E/0.96/#635	F/1.05/#735	D/0.79/230
	Route 229 SB Left	C/0.29/90	D/0.39/100	D/0.24/m50	C/0.27/80	C/0.33/90	B/0.14/30	D/0.51/#145	D/0.72/#180	D/0.24/m55
	Route 229 SB Left/ Thru	F/1.84/#960	F/2.83/#1065	E/1.03/#765	E/0.84/#390	F/1.22/#445	B/0.5/260	F/1.80/#645	F/1.97/#715	E/1.03/m480

		AM			Mid-day			PM		
		2020 Existing	2040 No Build	2040 Build	2020 Existing	2040 No Build	2040 Build	2020 Existing	2040 No Build	2040 Build
	Route 229 at Lake Avenue/ Terry Commons Driveway	**B/13.2**	**C/20.5**	**B/13.4**	**B/16.0**	**B/17.4**	**B/15.2**	**C/23.9**	**C/25.3**	**B/16.3**
	Lake Avenue EB Left	E/0.15/40	F/0.65/160	E/0.59/125	E/0.55/115	E/0.59/125	E/0.48/120	F/0.75/225	F/0.78/245	E/0.59/#205
	Lake Avenue EB Thru/Right	D/0.72/100	F/0.63/150	E/0.54/110	E/0.54/110	E/0.56/115	D/0.45/115	F/0.73/215	F/0.75/230	E/0.54/190
	Terry Commons Driveway WB Left	E/0.06/25	E/0.08/25	D/0.05/25	E/0.12/30	E/0.13/30	E/0.12/30	E/0.16/35	E/0.16/35	D/0.05/45
	Terry Commons Driveway WB Thru/ Right	A/0.00/25	A/0.01/25	A/0.02/25	A/0.01/25	A/0.01/25	A/0.01/25	E/0.18/35	E/0.22/40	A/0.02/30
	Route 229 NB Left	A/0.04/25	A/0.06/25	A/0.12/25	B/0.02/25	B/0.03/25	A/0.07/m10	B/0.10/40	B/0.12/40	A/0.12/m15
	Route 229 NB Thru/ Right	A/0.24/275	B/0.28/320	A/0.42/245	B/0.31/340	B/0.34/390	B/0.57/375	B/0.53/785	B/0.6/#975	A/0.42/525
	Route 229 SB Left	A/0.01/25	A/0.02/25	A/0.03/m5	B/0.01/25	B/0.02/25	A/0.04/25	B/0.02/25	B/0.02/25	A/0.03/m5
	Route 229 SB Left/ Thru	B/0.56/865	B/0.65/#1135	B/0.78/m485	B/0.40/465	B/0.46/545	B/0.7/660	B/0.45/545	B/0.5/635	B/0.78/m250
Middle Street Central Segment	**Route 229 at Battista Road/ Business Park Drive**	**B/16.7**	**B/18.2**	**B/19.1**	**A/9.0**	**A/9.4**	**C/25.0**	**B/12.6**	**B/13.6**	**C/20.3**
	Battista Road EB Left/ Thru/ Right	C/0.57/70	C/0.59/75	D/0.73/#120	A/0.20/25	A/0.22/25	A/0.19/25	C/0.57/#75	D/0.6/#80	D/0.73/120
	Business Park Drive WB Left/ Thru	0/0.00/25	B/0.1/25	C/0.3/65	0/0.00/25	C/0.07/25	B/0.22/50	0/0.00/25	B/0.17/40	C/0.3/85
	Business Park Drive WB Right	B/0.07/25	A/0.05/25	A/0.14/25	C/0.06/25	A/0.16/25	A/0.22/30	B/0.14/35	A/0.29/35	A/0.14/105
	Route 229 NB Left	A/0.23/35	B/0.29/40	B/0.38/35	A/0.10/25	A/0.12/25	A/0.17/m15	A/0.14/m10	A/0.17/m10	B/0.38/m15
	Route 229 NB Thru/ Right	B/0.33/175	B/0.37/200	B/0.55/290	A/0.27/140	A/0.3/155	C/0.73/#425	B/0.64/m#360	B/0.71/m#345	B/0.55/610
	Route 229 SB Left	A/0.18/45	A/0.22/50	A/0.35/40	A/0.03/25	A/0.03/25	A/0.16/m20	A/0.09/25	A/0.09/25	A/0.35/m40
	Route 229 SB Thru/ Right	B/0.61/#430	C/0.67/#510	C/0.82/#645	B/0.40/200	B/0.44/230	C/0.86/#645	B/0.44/175	B/0.48/195	C/0.82/335
Middle Street Central Segment	**Route 229 at Cross Street/ Redstone Hill Road**	**B/10.6**	**B/11.9**	**C/34.1**	**B/10.4**	**B/11.0**	**D/47.9**	**B/19.0**	**C/30.0**	**C/33.8**
	Cross Street EB Left	C/0.54/80	C/0.57/85	C/0.59/90	C/0.49/65	C/0.54/70	C/0.49/70	D/0.76/#120	D/0.82/#155	C/0.59/#325
	Cross Street EB Thru/ Right	B/0.33/55	B/0.35/60	B/0.45/85	B/0.37/65	B/0.4/70	B/0.46/80	B/0.45/95	B/0.46/105	B/0.45/240
	Redstone Hill Road WB Left	C/0.27/45	C/0.29/50	C/0.38/60	C/0.40/60	C/0.43/65	C/0.56/85	C/0.41/70	C/0.43/75	C/0.38/#205
	Redstone Hill Road WB Thru/ Right	C/0.43/80	C/0.46/90	C/0.43/85	B/0.47/65	B/0.49/70	B/0.45/65	B/0.48/90	B/0.5/100	C/0.43/225
	Route 229 NB Left	A/0.04/m5	A/0.07/m5	B/0.27/m15	A/0.09/25	B/0.1/25	C/0.54/m#35	B/0.16/m15	B/0.2/m20	B/0.27/m45
	Route 229 NB Thru/ Right	B/0.52/160	B/0.6/#140	F/1.12/#375	A/0.40/155	B/0.46/170	F/1.18/#280	C/0.88/#180	D/1.03/#280	F/1.12/m#775
	Route 229 SB Left	A/0.52/100	B/0.61/#145	C/0.67/m#190	A/0.20/40	A/0.23/45	A/0.27/35	C/0.50/85	C/0.54/m95	C/0.67/#260
	Route 229 SB Thru/ Right	A/0.41/140	A/0.46/170	A/0.65/145	A/0.27/85	A/0.3/100	A/0.59/335	A/0.31/25	A/0.35/25	A/0.65/260
Middle Street Central Segment	**Route 229 at Enterprise Drive North**	**A/4.0**	**A/4.1**	**A/5.3**	**A/4.8**	**A/5.1**	**A/7.5**	**A/7.5**	**A/7.7**	**C/27.3**
	Enterprise Drive North EB Left	C/0.42/65	C/0.45/70	C/0.45/70	C/0.46/70	C/0.49/75	C/0.49/75	C/0.64/110	C/0.66/115	C/0.45/#280
	Enterprise Drive North EB Right	B/0.21/25	A/0.21/25	B/0.24/40	A/0.30/35	A/0.31/35	C/0.39/60	A/0.19/25	A/0.2/30	B/0.24/45
	Route 229 NB Left/ Thru	A/0.31/25	A/0.35/30	A/0.58/70	A/0.26/35	A/0.29/50	A/0.64/m45	A/0.57/60	A/0.66/m90	A/0.58/#550
	Route 229 SB Thru/ Right	A/0.42/35	A/0.47/35	A/0.66/35	A/0.26/45	A/0.29/50	A/0.58/35	A/0.33/45	A/0.37/50	A/0.66/180

		AM			Mid-day			PM		
		2020 Existing	2040 No Build	2040 Build	2020 Existing	2040 No Build	2040 Build	2020 Existing	2040 No Build	2040 Build
	Route 229 at Driveway/ Ronzo Road	**B/12.0**	**B/12.5**	**B/15.6**	**A/7.5**	**A/7.8**	**D/41.1**	**B/13.2**	**B/15.0**	**C/30.5**
	Residential Complex Driveway EB Left/ Through/ Right	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25
	Ronzo WB Left/ Thru	D/0.79/145	D/0.82/165	D/0.88/#240	C/0.61/90	D/0.64/95	D/0.76/135	D/0.80/155	D/0.82/#175	D/0.88/#445
	Ronzo WB Right	A/0.10/25	A/0.1/25	A/0.09/25	A/0.10/25	A/0.1/25	A/0.08/25	A/0.18/25	A/0.18/25	A/0.09/40
	Route 229 NB Left	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25
	Route 229 NB Thru	A/0.46/25	A/0.52/25	B/0.8/#115	A/0.37/25	A/0.41/25	F/1.13/#430	B/0.71/#160	C/0.8/#275	B/0.8/535
	Route 229 NB Right	A/0.24/25	A/0.26/25	A/0.31/25	A/0.17/25	A/0.19/25	A/0.35/25	A/0.44/75	A/0.47/70	A/0.31/170
	Route 229 SB Left	A/0.15/35	A/0.18/m30	A/0.32/m10	A/0.10/25	A/0.12/25	A/0.16/m10	A/0.15/25	A/0.18/25	A/0.32/45
	Route 229 SB Thru / Right	B/0.38/180	B/0.43/200	B/0.7/275	A/0.24/125	A/0.27/145	A/0.67/300	A/0.37/25	A/0.42/25	B/0.7/185
Middle Street Central Segment	**Route 229 at Enterprise Drive South**	**A/5.0**	**A/6.1**	**C/25.2**	**A/3.6**	**A/3.5**	**A/7.4**	**A/3.6**	**A/4.7**	**B/13.1**
	Enterprise Drive South EB Left	C/0.04/25	C/0.05/25	C/0.16/35	C/0.07/25	C/0.08/25	C/0.07/25	C/0.12/30	C/0.13/30	C/0.16/75
	Enterprise Drive South EB Right	B/0.18/45	B/0.2/45	B/0.25/55	B/0.15/35	B/0.17/35	B/0.17/40	B/0.21/50	B/0.23/50	B/0.25/100
	Route 229 NB Left	A/0.49/25	A/0.59/25	B/0.66/100	A/0.10/25	A/0.12/m0	A/0.21/m0	A/0.23/m5	A/0.28/m5	B/0.66/m80
	Route 229 NB Thru	A/0.30/25	A/0.33/25	A/0.52/180	A/0.27/25	A/0.29/25	A/0.57/m325	A/0.49/50	A/0.54/m65	A/0.52/325
	Route 229 SB Thru / Right	A/0.59/85	A/0.66/#110	D/1.02/#575	A/0.33/55	A/0.37/60	B/0.75/#460	A/0.47/95	A/0.52/105	D/1.02/675
West Street Southern Segment	**Route 229 at ESPN Drive**	**A/3.6**	**A/4.5**	**B/11.4**	**A/3.3**	**A/3.8**	**C/28.7**	**B/11.3**	**B/13.8**	**B/11.7**
	ESPN Drive WB Left	C/0.07/25	C/0.07/25	D/0.1/25	C/0.17/30	C/0.19/35	C/0.19/35	C/0.40/65	C/0.42/70	D/0.1/130
	ESPN Drive WB Right	B/0.26/30	B/0.28/30	B/0.36/35	B/0.15/25	B/0.15/25	B/0.15/25	A/0.42/40	A/0.43/40	B/0.36/60
	Route 229 NB Thru	A/0.47/250	A/0.54/#280	C/0.76/#550	A/0.39/175	A/0.44/225	E/1.05/#530	B/0.76/#395	C/0.86/#450	C/0.76/235
	Route 229 NB Right	A/0.04/25	A/0.05/25	A/0.04/m10	A/0.03/25	A/0.04/25	A/0.05/m5	A/0.05/m10	A/0.05/m10	A/0.04/m10
	Route 229 SB Left	A/0.16/m15	A/0.18/m20	A/0.21/35	A/0.04/m5	A/0.04/m5	A/0.04/m5	A/0.05/m5	A/0.05/m5	A/0.21/m10
	Route 229 SB Thru	A/0.35/65	A/0.39/85	A/0.58/165	A/0.27/25	A/0.3/25	A/0.59/150	A/0.39/25	A/0.43/25	A/0.58/205
West Street Southern Segment	**Route 229 at Private Drive/ Ridgeview Estates**	**A/7.2**	**A/9.3**	**B/10.2**	**A/6.2**	**A/7.1**	**B/13.9**	**B/10.4**	**B/12.6**	**B/13.7**
	Private Drive EB Left	C/0.02/25	C/0.02/25	D/0.43/75	C/0.06/25	C/0.08/25	C/0.44/70	C/0.11/25	C/0.11/25	D/0.43/115
	Private Drive EB Thru	A/0.02/25	A/0.03/25	A/0.25/25	B/0.06/25	B/0.09/25	B/0.31/40	A/0.01/25	A/0.01/25	A/0.25/25
	Ridgeview Estates WB Left	C/0.08/25	C/0.09/25	D/0.17/35	C/0.22/40	C/0.24/45	C/0.25/40	C/0.10/25	C/0.11/25	D/0.17/45
	Ridgeview Estates WB Thru/ Right	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	B/0.09/25	B/0.08/25	A/0.00/25	A/0.01/25	A/0.01/25
	Route 229 NB Left	A/0.32/m25	A/0.09/m5	A/0.34/m20	A/0.31/m55	A/0.05/m5	A/0.33/25	A/0.48/m60	A/0.15/m5	A/0.34/50
	Route 229 NB Thru/ Right	0/0.00/25	A/0.35/m25	B/0.52/m370	0/0.00/25	A/0.35/m55	B/0.67/#455	0/0.00/25	A/0.53/m65	B/0.52/565
	Route 229 SB Left	A/0.00/m5	A/0.01/m5	A/0.02/m5	A/0.02/m5	A/0.02/m5	A/0.04/m0	A/0.08/m5	A/0.1/m5	A/0.02/m15
	Route 229 SB Thru/ Right	B/0.68/#685	B/0.77/#780	A/0.67/220	A/0.57/#490	A/0.63/#570	B/0.84/#555	B/0.80/#740	C/0.88/#845	A/0.67/415

		AM			Mid-day			PM		
		2020 Existing	2040 No Build	2040 Build	2020 Existing	2040 No Build	2040 Build	2020 Existing	2040 No Build	2040 Build
West Street Southern Segment	**Route 229 at West Queen Street**	**D/40.9**	**E/58.9**	**D/38.4**	**C/29.1**	**D/36.9**	**F/99.1**	**D/42.5**	**E/64.4**	**F/139.0**
	West Queen Street EB Left/ Thru/ Right	E/0.92/#195	F/1.01/#215	D/0.53/135	F/1.14/#240	F/1.27/#270	A/0.24/55	F/1.40/#275	F/1.72/#320	D/0.53/80
	West Queen Street WB Left	C/0.32/45	C/0.37/50	F/1.26/#305	C/0.17/30	C/0.19/30	E/0.94/#385	D/0.60/#90	D/0.67/#105	F/1.26/#465
	West Queen Street WB Thru	0/0.00/25	C/0.08/25	B/0.58/80	0/0.00/25	B/0.2/40	B/0.71/230	0/0.00/25	D/0.79/#170	B/0.58/#900
	Route 229 NB Left	B/0.53/250	B/0.66/m60	C/0.71/#135	B/0.40/170	A/0.09/m15	B/0.16/m10	B/0.70/175	A/0.24/m10	C/0.71/55
	Route 229 NB Thru/ Right	0/0.00/25	B/0.58/280	C/0.91/#575	0/0.00/25	B/0.44/195	F/1.19/#275	0/0.00/25	B/0.77/m170	C/0.91/#1345
	Route 229 SB Left	A/0.29/m0	A/0.35/m0	D/0.9/#325	A/0.28/m5	A/0.32/m5	F/1.55/#615	B/0.45/m20	B/0.5/m20	D/0.9/#850
	Route 229 SB Thru /Right	E/1.08/#620	F/1.19/#700	B/0.66/195	B/0.65/#390	B/0.72/#455	C/0.73/390	C/0.94/m#610	D/1.04/m#615	B/0.66/585
West Street Southern Segment	**Route 229 at Welch Road**	**D/40.3**	**E/62.8**	**B/14.9**	**B/19.5**	**C/31.9**	**C/23.7**	**E/62.5**	**F/91.1**	**C/22.8**
	Welch Road EB Left	C/0.15/35	C/0.17/35	D/0.24/50	C/0.15/35	C/0.17/35	D/0.25/50	C/0.15/35	C/0.17/35	D/0.24/65
	Welch Road EB Right	A/0.42/40	A/0.44/45	B/0.53/55	B/0.21/25	B/0.22/30	B/0.29/35	B/0.26/30	B/0.28/30	B/0.53/45
	Route 229 NB Left/ Thru	A/0.62/110	A/0.69/130	A/0.64/210	A/0.31/55	A/0.36/60	A/0.51/135	A/0.76/#170	B/0.92/#250	A/0.64/m120
	Route 229 SB Thru * (thru/right in existing	-	-	C/0.91/m390	-	-	D/1.01/m#620	-	-	C/0.91/#795
	Route 229 SB Right** (thru ln & right ln in Build	F/1.16/m#385	F/1.28/m#390	A/0.05/m5	D/0.97/m#455	E/1.07/m#515	A/0.05/m10	F/1.24/m#555	F/1.36/m#550	A/0.05/50
West Street Southern Segment	**Route 229 at Spring Street**	**A/7.6**	**A/8.2**	**B/17.7**	**A/8.2**	**A/8.2**	**B/14.2**	**A/8.5**	**A/9.5**	**C/20.4**
	Spring Street WB Left	D/0.17/55	D/0.22/60	D/0.42/100	C/0.20/65	D/0.24/80	E/0.4/90	D/0.26/65	D/0.29/70	D/0.42/80
	Spring Street WB Right	B/0.14/30	B/0.18/25	A/0.22/25	B/0.23/40	B/0.26/25	C/0.52/70	B/0.29/40	B/0.33/25	A/0.22/25
	Route 229 NB Thru/ Right	A/0.50/220	A/0.54/255	C/0.83/720	B/0.40/130	A/0.41/145	C/0.75/590	B/0.59/305	B/0.64/360	C/0.83/#965
	Route 229 SB Left	A/0.18/25	A/0.22/25	C/0.6/170	A/0.13/25	A/0.14/25	B/0.52/145	A/0.38/25	A/0.47/40	C/0.6/m100
	Route 229 SB Thru	A/0.62/260	A/0.68/345	A/0.52/280	A/0.50/170	A/0.54/210	A/0.49/165	A/0.59/260	A/0.65/335	A/0.52/m670
West Street Southern Segment	**Route 229 at Curtiss Street**	**A/7.8**	**B/16.6**	**D/38.9**	**A/7.0**	**A/8.3**	**D/40.9**	**E/68.8**	**F/138.6**	**B/14.0**
	Curtiss Street WB Left/ Right	B/0.16/30	B/0.18/35	D/0.51/80	B/0.26/45	B/0.3/50	D/0.61/175	C/0.55/100	C/0.6/115	D/0.51/#300
	Curtiss Street NB Thru/ Right	A/0.35/105	A/0.4/120	E/0.87/#610	A/0.26/60	A/0.29/70	A/0.59/95	A/0.59/200	A/0.65/255	E/0.87/135
	Route 229 SB Thu/ Left	B/0.79/#645	C/0.95/#745	A/0.52/190	A/0.66/280	B/0.73/#465	A/0.5/205	F/1.30/#735	F/1.7/#890	A/0.52/205
West Street Southern Segment	**Route 229 at Corporate Drive/ Centrion Plaza Drive**	**B/14.0**	**C/26.3**	**D/45.5**	**A/5.6**	**A/6.5**	**A/5.0**	**A/9.0**	**B/13.3**	**B/11.7**
	Corporate Drive EB Left/ Thru/ Right	B/0.45/55	C/0.49/60	C/0.51/140	A/0.17/25	A/0.2/25	C/0.55/80	C/0.29/40	C/0.34/45	C/0.51/140
	Centrion Plaza WB Left/ Thru/ Right	A/0.05/25	A/0.06/25	A/0.04/25	A/0.20/25	B/0.24/25	C/0.33/40	A/0.17/25	A/0.19/25	A/0.04/55
	Route 229 NB Left	B/0.44/60	E/0.81/#75	C/0.55/#90	A/0.10/25	A/0.14/25	A/0.31/40	A/0.21/25	A/0.31/30	C/0.55/m80
	Route 229 NB Thru/ Right	A/0.41/115	A/0.45/135	E/0.81/#555	A/0.30/60	A/0.33/70	A/0.53/210	A/0.55/155	A/0.6/190	E/0.81/615
	Route 229 SB Left	A/0.00/25	A/0.02/25	A/0.07/m5	A/0.02/25	A/0.02/25	A/0.07/m5	A/0.07/25	A/0.09/25	A/0.07/m10
	Route 229 SB Thru/ Right	C/0.82/#595	D/0.9/#700	B/0.79/275	A/0.59/185	A/0.65/225	A/0.51/80	B/0.75/360	C/0.83/#600	B/0.79/335

		AM			Mid-day			PM		
		2020 Existing	2040 No Build	2040 Build	2020 Existing	2040 No Build	2040 Build	2020 Existing	2040 No Build	2040 Build
	Route 229 at Executive Boulevard North	**A/6.1**	**A/6.5**	**A/8.9**	**A/2.1**	**A/2.3**	**A/8.4**	**A/9.3**	**B/10.1**	**B/12.6**
	Executive Boulevard North EB Left	C/0.05/25	C/0.05/25	D/0.4/75	C/0.10/25	C/0.11/30	C/0.13/30	C/0.28/55	C/0.3/55	D/0.4/125
	Executive Boulevard North EB Right	B/0.07/25	B/0.08/25	B/0.3/40	B/0.05/25	B/0.06/25	B/0.07/25	A/0.30/35	A/0.32/35	B/0.3/55
	Route 229 NB Left	A/0.19/25	A/0.23/25	B/0.31/m55	A/0.05/25	A/0.05/25	A/0.11/m0	A/0.05/25	A/0.05/25	B/0.31/m10
	Route 229 NB Thru	A/0.35/95	A/0.39/110	A/0.55/215	A/0.22/25	A/0.24/25	A/0.48/230	A/0.51/160	A/0.56/195	A/0.55/310
	Route 229 SB Thru/ Right	B/0.51/210	B/0.56/240	B/0.69/515	A/0.32/75	A/0.36/95	B/0.69/#375	B/0.58/210	B/0.64/245	B/0.69/665
West Street Southern Segment	**Route 229 at Executive Boulevard South**	**B/12.3**	**B/13.9**	**A/9.6**	**B/10.6**	**B/11.4**	**A/10.0**	**B/14.9**	**B/17.6**	**B/15.1**
	Executive Boulevard South EB Left	C/0.24/45	C/0.27/50	D/0.43/75	C/0.43/80	C/0.47/85	D/0.63/#115	C/0.50/105	C/0.51/115	D/0.43/225
	Executive Boulevard South EB Right	A/0.07/25	A/0.08/25	B/0.1/30	A/0.09/25	A/0.1/25	A/0.12/25	A/0.37/90	A/0.4/100	B/0.1/225
	Route 229 NB Left	B/0.41/90	B/0.44/100	D/0.47/m155	C/0.26/45	C/0.27/50	C/0.34/m45	C/0.34/70	C/0.37/75	D/0.47/m125
	Route 229 NB Thru	A/0.47/115	A/0.51/140	A/0.61/140	A/0.27/75	A/0.3/90	A/0.53/m180	A/0.55/185	A/0.62/215	A/0.61/m175
	Route 229 SB Thru	C/0.69/210	C/0.79/#265	A/0.77/115	B/0.43/165	B/0.49/185	A/0.7/120	C/0.79/#255	C/0.9/#295	A/0.77/90
	Route 229 SB Right	A/0.21/50	A/0.24/55	A/0.21/m5	A/0.09/25	A/0.1/25	A/0.09/m0	A/0.13/25	A/0.14/25	A/0.21/m0
West Street Southern Segment	**Route 229 at I-84 WB On Ramp/ I-84 WB Off Ramp**	**A/8.5**	**A/9.3**	**C/32.6**	**A/8.0**	**A/8.2**	**C/22.2**	**B/14.5**	**B/16.0**	**C/27.6**
	I-84 WB Off Ramp WB Left	C/0.27/50	C/0.29/55	C/0.16/65	C/0.34/60	C/0.37/65	B/0.21/60	C/0.64/145	C/0.67/160	C/0.16/235
	I-84 WB Off Ramp WB Thru	C/0.27/50	C/0.29/55	C/0.16/65	C/0.35/65	C/0.37/65	B/0.21/60	C/0.64/145	C/0.67/160	C/0.16/235
	I-84 WB Off Ramp WB Right	B/0.61/80	B/0.65/90	D/0.88/#310	A/0.49/45	A/0.51/50	E/1.06/#350	C/0.83/#200	D/0.88/#240	D/0.88/#680
	Route 229 NB Left	A/0.05/25	A/0.06/25	A/0.08/30	A/0.06/25	A/0.06/25	A/0.1/25	A/0.14/25	A/0.18/30	A/0.08/55
	Route 229 NB Thru	A/0.51/180	A/0.57/210	B/0.74/465	A/0.26/65	A/0.29/75	A/0.5/145	A/0.49/150	A/0.55/175	B/0.74/510
	Route 229 SB Thru	B/0.20/55	B/0.22/65	B/0.42/m85	B/0.26/85	B/0.29/95	B/0.55/160	B/0.52/145	B/0.59/165	B/0.42/335
	Route 229 SB Right	A/0.68/65	A/0.72/65	E/0.83/#675	A/0.44/50	A/0.47/50	B/0.69/315	A/0.72/65	A/0.76/70	E/0.83/685

Appendix C Synchro Capacity Analysis

MD Synchro Report

Appendix C Summary of Crash Data

Node Crash Data: Route 229 Corridor Study, Bristol- Southington, CT – SEGMENT 1

	@ Route 6 / Farmington Ave.	@ Moody St. / Louisiana Ave.	@ High School Dr.	@ Woodland St.	@ W. Washington St.	@ Broad St.
Year						
2017	4	9	5	3	7	1
2018	9	7	1	1	6	7
2019	8	10	1	3	4	3
2020	0	0	0	0	0	0
Total	21	26	7	7	17	11
Crash Type						
Angle	9	14	3	2	4	3
Front to Front	0	1	1	0	0	1
Front to Rear	9	10	2	4	9	4
Not Applicable	0	0	1	0	3	1
Other	1	0	0	0	0	2
Rear to Rear	0	0	0	0	0	0
Rear to Side	0	0	0	0	0	0
Sideswipe, Opposite Direction (O-D)	0	1	0	1	0	0
Sideswipe, Same Direction (S-D)	2	0	0	0	1	0
Total	21	26	7	7	17	11
Severity						
Fatal Injury (K)	0	1	0	0	0	0
Suspected Serious Injury (A)	1	0	0	0	0	0
Suspected Minor Injury (B)	3	3	1	1	1	0
Possible Injury (C)	1	5	1	1	0	2
No Apparent Injury (O)	16	17	5	5	16	9
Unknown	0	0	0	0	0	0
Total	21	26	7	7	17	11

Node Crash Data: Route 229 Corridor Study, Bristol- Southington, CT – SEGMENT 2

	@ Route 72	@ Pine St.	@ Lake Ave.	@ Business Park Rd.	@ Cross St.	@ Enterprise Dr.	@ Ronzo Rd.	@ Enterprise Dr. South
Year								
2017	31	67	6	5	10	1	2	3
2018	22	53	7	1	7	2	6	3
2019	27	61	7	2	6	2	4	4
2020	0	0	0	0	0	0	0	0
Total	**80**	**181**	**20**	**8**	**23**	**5**	**12**	**10**
Crash Type								
Angle	16	75	9	3	14	1	9	1
Front to Front	2	3	0	1	0	0	0	0
Front to Rear	45	63	6	3	3	2	2	5
Not Applicable	4	9	2	1	1	0	0	3
Other	0	4	0	0	1	0	0	0
Rear to Rear	0	2	0	0	0	0	0	0
Rear to Side	0	0	0	0	0	0	0	0
Sideswipe, O-D	0	1	0	0	0	1	0	0
Sideswipe, S-D	13	24	3	0	4	1	1	1
Total	**80**	**181**	**20**	**8**	**23**	**5**	**12**	**10**
Severity								
Fatal Injury (K)	0	0	0	0	0	0	0	0
Suspected Serious Injury (A)	0	3	0	0	2	0	0	0
Suspected Minor Injury (B)	10	20	0	1	6	1	2	1
Possible Injury (C)	16	28	3	2	4	2	2	1
No Apparent Injury (O)	54	130	17	5	11	2	8	8
Unknown	0	0	0	0	0	0	0	0
Total	**80**	**181**	**20**	**8**	**23**	**5**	**12**	**10**

Node Crash Data: Route 229 Corridor Study, Bristol- Southington, CT – SEGMENT 3

	@ ESPN Dr.	@ West St.	@ W. Queen St.	@ Welch Rd.	@ Spring St.	@ Curtiss St.	@ Corporate Dr.	@ Executive Blvd. N	@ Executive Blvd. S	@ I-84 WB On / Off Ramps
Year										
2017	3	3	18	3	9	12	2	1	10	12
2018	0	1	11	0	5	5	1	7	5	8
2019	3	0	15	2	8	11	0	9	8	14
2020	0	0	0	0	0	0	0	0	0	0
Total	6	4	44	5	22	28	3	17	23	34
Crash Type										
Angle	1	0	10	0	6	11	3	2	6	14
Front to Front	0	0	1	0	1	0	0	1	0	0
Front to Rear	2	3	23	4	10	12	0	12	14	16
Not Applicable	1	1	3	0	2	0	0	1	0	1
Other	0	0	0	1	0	0	0	0	0	0
Rear to Rear	0	0	0	0	0	0	0	0	0	0
Rear to Side	0	0	0	0	0	0	0	0	0	0
Sideswipe, O-D	0	0	0	0	0	1	0	0	0	0
Sideswipe, S-D	2	0	7	0	3	4	0	1	3	3
Total	6	4	44	5	22	28	3	17	23	34
Severity										
Fatal Injury (K)	0	0	1	0	0	0	0	0	0	0
Suspected Serious Injury (A)	1	0	1	0	0	1	0	1	0	0
Suspected Minor Injury (B)	0	0	6	2	2	7	1	0	3	4
Possible Injury (C)	1	1	6	1	6	3	0	5	2	3
No Apparent Injury (O)	4	3	30	2	14	17	2	11	18	27
Unknown	0	0	0	0	0	0	0	0	0	0
Total	6	4	44	5	22	28	3	17	23	34

Segment Crash Data: Route 229 Corridor Study, Bristol- Southington, CT – SEGMENT 1

	Route 6 / Farmington Ave. & Moody St. / Louisiana Ave.	Moody St. & High School Driveway	High School Dr. & Woodland St.	Woodland St. & W. Washington St.	W. Washington St. & Broad St.
Year					
2017	13	5	2	7	13
2018	7	5	3	4	14
2019	13	6	3	0	9
2020	0	0	0	0	0
Total	33	16	8	11	36
Crash Type					
Angle	15	3	0	2	4
Front to Front	0	0	0	0	1
Front to Rear	7	12	7	8	17
Not Applicable	3	0	1	0	3
Other	3	0	0	0	0
Rear to Rear	0	0	0	0	0
Rear to Side	0	0	0	0	1
Sideswipe, Opposite Direction (O-D)	1	1	0	0	3
Sideswipe, Same Direction (S-D)	4	0	0	1	7
Total	33	16	8	11	36
Severity					
Fatal Injury (K)	0	0	0	0	1
Suspected Serious Injury (A)	0	0	0	0	1
Suspected Minor Injury (B)	2	2	1	1	2
Possible Injury (C)	5	2	2	1	4
No Apparent Injury (O)	26	12	5	9	28
Unknown	0	0	0	0	0
Total	33	16	8	11	36

Segment Crash Data: Route 229 Corridor Study, Bristol- Southington, CT – SEGMENT 2

	Broad St. & Rt 72	Rt 72 & Pine St.	Pine St. & Lake Ave.	Lake Ave. & Business Park Rd.	Business Park Rd. & Cross St.	Cross St. & Enterprise Dr.	Enterprise Dr. & Ronzo Rd.	Ronzo Rd. & Enterprise Dr. South	Enterprise Dr. South & ESPN Dr.
Year									
2017	1	8	3	7	6	3	1	1	1
2018	1	9	5	6	4	3	2	1	2
2019	2	10	4	8	4	7	7	0	2
2020	0	0	0	0	0	0	0	0	0
Total	4	27	12	21	14	13	10	2	5
Crash Type									
Angle	0	12	2	7	7	4	2	0	1
Front to Front	0	0	0	2	0	0	0	0	0
Front to Rear	1	8	4	5	2	3	2	0	3
Not Applicable	0	2	2	3	2	2	3	2	1
Other	0	1	0	1	1	0	1	0	0
Rear to Rear	0	0	0	0	0	0	0	0	0
Rear to Side	0	0	0	0	0	0	0	0	0
Sideswipe, O-D	0	0	0	0	1	1	1	0	0
Sideswipe, S-D	3	4	4	3	1	3	1	0	0
Total	4	27	12	21	14	13	10	2	5
Severity									
Fatal Injury (K)	0	1	0	0	0	0	0	0	0
Suspected Serious Injury (A)	0	0	0	0	1	0	0	0	0
Suspected Minor Injury (B)	0	3	0	3	1	2	1	0	0
Possible Injury (C)	0	3	1	2	0	2	0	0	0
No Apparent Injury (O)	4	20	11	16	12	9	9	2	5
Unknown	0	0	0	0	0	0	0	0	0
Total	4	27	12	21	14	13	10	2	5

Segment Crash Data: Route 229 Corridor Study, Bristol- Southington, CT – SEGMENT 3

	ESPN Dr. & West St.	West St. & W. Queen St.	W. Queen St. & Welch Rd.	Welch Rd. & Spring St.	Spring St. & Curtiss St.	Curtiss St. & Corporate Dr.	Corporate Dr. & Executive Blvd. North	Executive Blvd. North & Executive Blvd. South	Executive Blvd. South & I-84 WB On / Off Ramps
Year									
2017	4	2	7	2	7	0	3	4	3
2018	9	2	5	10	9	2	1	5	6
2019	9	2	4	3	13	5	2	3	1
2020	0	0	0	0	0	0	0	0	0
Total	22	6	16	15	29	7	6	12	10
Crash Type									
Angle	2	0	1	5	1	0	1	0	5
Front to Front	0	0	0	0	0	0	0	0	0
Front to Rear	12	4	13	6	21	5	5	12	3
Not Applicable	2	0	0	4	4	1	0	0	0
Other	0	0	0	0	0	0	0	0	1
Rear to Rear	0	0	0	0	0	0	0	0	0
Rear to Side	0	0	0	0	0	0	0	0	0
Sideswipe, O-D	1	0	0	0	2	0	0	0	0
Sideswipe, S-D	5	2	2	0	1	1	0	0	1
Total	22	6	16	15	29	7	6	12	10

	ESPN Dr. & West St.	West St. & W. Queen St.	W. Queen St. & Welch Rd.	Welch Rd. & Spring St.	Spring St. & Curtiss St.	Curtiss St. & Corporate Dr.	Corporate Dr. & Executive Blvd. North	Executive Blvd. North & Executive Blvd. South	Executive Blvd. South & I-84 WB On / Off Ramps
Severity									
Fatal Injury (K)	0	0	0	0	0	0	0	0	0
Suspected Serious Injury (A)	0	0	0	0	1	0	0	0	0
Suspected Minor Injury (B)	5	1	3	2	3	2	0	2	1
Possible Injury (C)	4	0	0	2	3	2	0	2	0
No Apparent Injury (O)	13	5	13	11	22	3	6	8	9
Unknown	0	0	0	0	0	0	0	0	0
Total	22	6	16	15	29	7	6	12	10

Appendix D Fatal Crash Summary

Fatal Crash Summary by Date:

In total there were 6 fatal crashes between 2015 and 2020. Five of these crashes occurred in Bristol and one in Southington. One of the crashes involved struck pedestrian while three other included motorcycle collision. The remaining two crashes involved automobile. While reviewing the data, no one contributing factor could be selected for fatal crash but a multitude of conditions including weather, roadway condition, under the influence of a substance, daylight, wearing protective gear (helmet), etc. Below is a quick summary of each accident and link to open source information.

December 13th, 2015

Car travelling northbound on Route 229 drifted across the yellow line and struck a car travelling in the southbound direction. The crash took place shortly after midnight and the driver of the northbound car registered a BAC level three times the legal limit.

Sources:

- https://www.nbcconnecticut.com/news/local/two-car-collision-closes-road-in-bristol/83514/
- https://www.fox61.com/article/news/local/outreach/awareness-months/man-to-serve-15-years-for-drunk-driving-crash-that-killed-2-young-girls-in-bristol/520-1dede813-bb97-4820-b561-e85b4c78194b

November 27th, 2016

Motorcycle travelling eastbound on Route 6 struck by car travelling westbound making a left turn onto Route 229. Crash took place approximately 6:40 AM, driver of motorcycle was not wearing helmet.

Sources:

- https://www.masslive.com/news/2016/11/connecticut_police_investigate.html

March 19th, 2017

A vehicle travelling westbound was struck by a car travelling southbound on Route 229 just after 2 AM. The driver of the westbound vehicle was intoxicated and drove through a flashing red light, initiating the collision with the southbound vehicle.

Sources:

- http://www.bristolpress.com/BP-Southington+Herald+News/335213/bristol-man-gets-5-years-in-prison-in-fatal-southington-crash

September 15th, 2017

Driver of motorcycle travelling northbound on Route 229 collides with pickup truck making a left turn into gas station parking lot. Driver of motorcycle sustained fatal injuries.

Sources:

- https://www.nbcconnecticut.com/news/local/police-investigating-fatal-crash-in-bristol/22403/
- http://www.bristolpress.com/BP-General+News/302377/city-man-dies-following-motor-vehicle-accident-involving-motorcycle-today

December 15th, 2018

Car travelling southbound on Route 229 struck pedestrian crossing the street at the intersection with Bernside Drive.

Sources:

- http://www.bristolpress.com/BP-Bristol+News/341643/bristol-police-id-pedestrian-killed-in-dec-15-car-accident
- https://www.nbcconnecticut.com/news/local/pedestrian-suffers-life-threatening-injuries-in-bristol-crash-2/160166/

September 16th, 2019

Crash took place at intersection of Route 229(King Street) and Moody Street/ Louisiana Avenue. Driver on motorcycle travelling eastbound from Moody Street onto Louisiana Avenue struck car travelling westbound making a left hand turn onto Route 229 from Louisiana Avenue.

Sources:

- http://www.bristolpress.com/BP-Bristol+News/358213/moped-rider-injured-after-crash-monday

Appendix E Hazardous Risk Site

Hazardous Risk Sites

CTDEEP's List of Contaminated or Potentially Contaminated Sites:

Bristol:

Name	Address	Site Definition
Advance Printing Services, Inc	135 Cross Street	Property Transfer – Form III Investigation Started
Accurate Forging Corp	201 Pine Street	Inventory of Hazardous Waste Disposal Sites
Accurate Forging Corporation	219 Pine Street	Property Transfer – Form III Remediation Complete
Bristol Chromium Corp.	76 Ronzo Road	Inventory of Hazardous Waste Disposal Sites
Bristol Wrecker Service And 115 Pine Street Autobody Shop	115 Pine Street	Property Transfer – Form III Investigation started
BW Manufacturing Company, Inc.	111 Enterprise Drive	Property Transfer – Form III Investigation started
Chick Miller Chevrolet	40 West Street	Leaking Underground Storage Tanks – Completed
Comerford Manufacturing Company	319 Lake Avenue	CERCLIS
Comerford Mfg. Co	315 Lake Avenue	Inventory of Hazardous Waste Disposal Sites
Connecticut Treatment / Southdown Environmental	0 Cross Street	Property Transfer – Form III Investigation started
Crowley Lincoln-Mercury, Inc	754 Pine Street	Property Transfer – Form III Investigation started
Cross Street Pump Station	165 Cross Street	Leaking Underground Storage Tanks – Pending
Enflo Corporation	315 Lake Avenue	Voluntary Remediation: CGS 22a.-133x Remediation Complete
Farmington Avenue Assoc.	Route 6	Inventory of Hazardous Waste Disposal Sites
FasMart #1324 (former Dbm 228 Pine Street #111)	228 Pine Street	Leaking Underground Storage Tanks – Pending
FasMart #1325 (former Cpm # 513)	948 Pine Street	Leaking Underground Storage Tanks – Rem. Started
FasMart #301 (former Frank's Mobil And Dbm #579)	105 West Street	Leaking Underground Storage Tanks – Completed
Forestville Commons Shopping Center	771 Pine Street	Voluntary Remediation: CGS 22a.-133x Investigation started
Forestville Machine Company	60 Ronzo Road	Property Transfer – Form III Remediation Complete

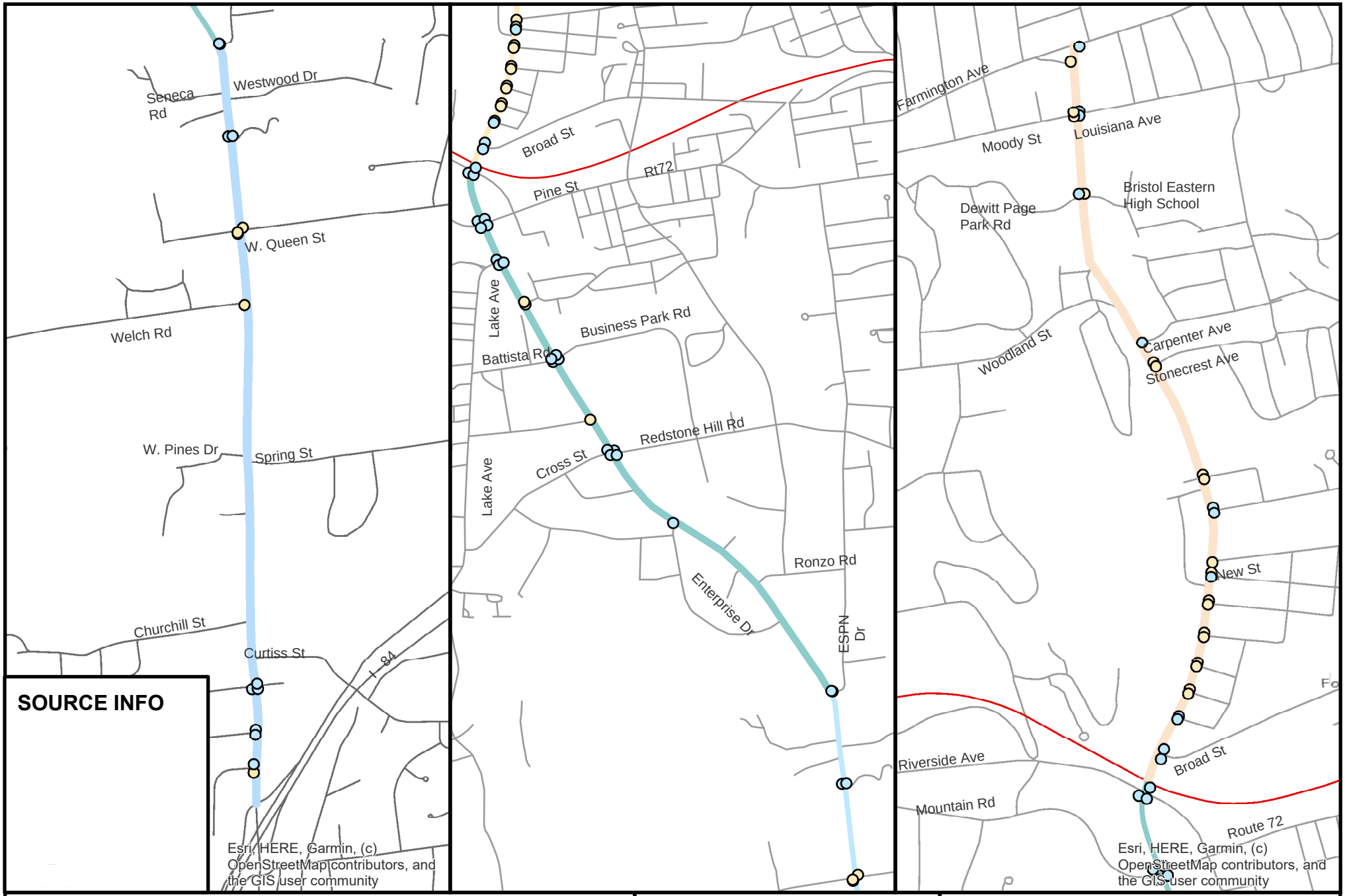
Name	Address	Site Definition
Former Forestville Shell Station	801 Pine Street	Leaking Underground Storage Tanks – Completed
Green Hills School	718 Pine Street	Leaking Underground Storage Tanks – Investigation
Gustafson Service Station	434 Broad Street	Leaking Underground Storage Tanks – Pending
Hamelin & Sons	64 West St.	Leaking Underground Storage Tanks – Completed
Hartford Provision Co. (hpc Food Service)	205 Enterprise Drive	Leaking Underground Storage Tanks – Completed
Industrial Components	West Washington St.	Leaking Underground Storage Tanks – Completed
Morning Pond Resources	218 West Street	Leaking Underground Storage Tanks – Completed
O'Connel School	120 Park Stree	Leaking Underground Storage Tanks – Completed
Precision Threaded Products, Inc	220 Business Park Road	Property Transfer – Form III Investigation started
Radcliffe Wire	97 Ronzo Road	Inventory of Hazardous Waste Disposal Sites
Raym-co	375 Lake Avenue	Property Transfer – Form III Remediation Complete
Rostra Vernatherm	106 Enterprise Drive	Property Transfer – Form III Investigation started
Superior Electric	383 Middle St	CERCLIS
Theis Precision Steel	300 Broad Street	Leaking Underground Storage Tanks – Rem. Started
Warner Electric (a/k/a Superior Electric)	90 Business Park Drive	Property Transfer – Form III Investigation started
Washington Hgts Apts	160 West Washington St	Leaking Underground Storage Tanks – Completed
Acme Rivet & Machine Corp	400 Middle Street	Inventory of Hazardous Waste Disposal Sites
Bedus & Stahnke	935 Middle Street	Inventory of Hazardous Waste Disposal Sites
Food Bag	527 Middle Street	Leaking Underground Storage Tanks – Complete
Former Baron & Young Buffing & Polishing	933 Middle Street	Leaking Underground Storage Tanks – Completed
J. Laviero Metals Company	894 Middle Street	Voluntary Remediation: CGS 22a.-133x Remediation Started
Mercury Fuel Service, Inc	63 Middle Street	Leaking Underground Storage Tanks – Rem.

Southington:

Name	Address	Site Definition
Cassidiy's Stripping & Finishing	78 West Street	Property Transfer – Form III Investigation started
Cumberland Farms #811	1978 West Street	Leaking Underground Storage Tanks – Completed
Dragon Furniture Stripping	2091 West Street	Property Transfer – Form III Remediation Complete
Ethicon Endo-surgery, Inc	201 West Queen Street	Property Transfer – Form III Investigation started
Light Metals Coloring Co.	270 Spring Street	Inventory of Hazardous Waste Disposal Sites
Medex, Inc	201 West Queen Street	Property Transfer – Form III Remediation Started
Mobil Service Station #01-218	956 West Street	Leaking Underground Storage Tanks – Pending
Nelson Screw Machine And Kulka Smith, Inc. Nelson Division	341 West Street	Leaking Underground Storage Tanks – Completed
Nickson Industries	8 West Street	Inventory of Hazardous Waste Disposal Sites
P.j. Delahunty Inc	124 Curtiss St.	Leaking Underground Storage Tanks – Pending
Rem Chemicals, Inc.	325 West Queen Street	Property Transfer – Form III Remediation Complete
Sunoco #0012-2606	957 West Street	Leaking Underground Storage Tanks – Rem. Started
The Gordon Corporation	170 Spring Street	Property Transfer - Form III Post Remedial Monitoring Started
The Hartford	200 Executive Boulevard	Leaking Underground Storage Tanks – Investigation
The Hartford Plic	100 Executive Boulevard	Leaking Underground Storage Tanks – Completed
West Street Service	802 West Street	Leaking Underground Storage Tanks – Completed
Westview Associates (formerly Leased By Alliance)	662 West Street	Leaking Underground Storage Tanks – Completed

Note: Information based on List of Contaminated or Potentially Contaminated Sites in Connecticut. (09/08/20). The side definition description can be found: Definitions for List of Contaminated Sites (ct.gov)

Appendix F ADA Compliance



SOURCE INFO

Legend

Handicap ramps

- ADA Non-Compliant
- ADA Compliant

Corridor 3 segments

- 1
- 2
- 3

- Roads
- Rail
- Border

N

CT Route 229 Corridor Study

BL Companies — Architecture Engineering Environmental Land Surveying

ADA Ramp Compliance

Appendix G Stakeholder Information

Architecture
Engineering
Environmental
Land Surveying
Companies

An Employee-Owned Company

JOB MEETING MINUTES

PROJECT NUMBER:	**1901992**	**MEETING NO.**	**2.1**
PROJECT NAME:	**CT Route 229 Corridor Study**		
DATE OF MEETING:	12/17/2020	**DATE OF ISSUE:**	12/17/2020

CLIENT:	**NVCOG**
NAME:	**Christian Meyer**
ADDRESS:	49 Leavenworth Street, 3rd Floor
	Waterbury, Connecticut 06702
PHONE NUMBER:	203-489-0367

Project Team:

NAME	TITLE	FIRM OR AGENCY	PHONE	EMAIL
Christian Meyer	Project Manager	NVCOG		
Mike Dion	Project Manager	BL Companies		
Pat Padlo	Deputy Project Manager	BL Companies		
Robert Phillips	Director of Planning and Community Development	Town of Southington		
Louis Perrillo	Director of Economic Development	Town of Southington		
David Williams	Market Analyst	The Williams Group Real Estate Advisors		
Susan Olivier	Market Analyst			

DISTRIBUTION TO ALL ATTENDEES AND THE FOLLOWING:

ITEM NO.	DESCRIPTION	ACTION BY
1.01	General introduction of call participants and project team	No action needed
1.02	Several major traffic generators and proposed developments were discussed during the call. Also the M&M study (POCD	No action needed

	2015) has been referenced when discussing economic development goals for 229 and surrounding areas.	
1.03	The town of Southington historically has 6 families / developers that own~400 acres: - 60 acres by Curtis & Spring St – Toll Brothers (& Builders) - 112 acres behind CAVA – owned by Sepko - Frank Rolla? (owns 2 factories along the corridor) - Mark Lovely Developer in Southington - Robert "Rusty" Rogers - Anthony Denorfia	
1.04	Certain developments are cost / land prohibitive to develop. Attempt that didn't' make it thru were: - senior housing (no tax incentives & environmental issues at a particular parcel- didn't catch where) - hard to find developers that specialize in Mix-use (easy to find commercial or residential but not both) - issues with ratios, distance to commercial land, wetlands, transmission lines, topography, etc. - the 112-acre site was looked at by FedEx but it deemed not usable due to topography (trucks vs. grade)	No action needed
1.05	Southington has two "downtown areas": Plantsville and Southington center. - During current market conditions, restaurant row w/ small boutiques do better than traditional retail downtown.	No action needed
1.06	The corridor study should consider impacts of surrounding corridors: W. Queen St. was identified as a driver for mix use development between 229 & US10. Southington wants to ensure that any proposed developments would not have negative impacts on traffic flow fluidity. US10 (Queen St) is an example of stop-n-go traffic that is particularly bad during peak hours.	No action needed
1.07	Some of the zoning regulations might be restrictive – 15-20% colonial character. - 1316 West St (30acre) – Life Style Center – property to develop housing - W. Queen St. was identified as a driver for mix use development between 229 & US10. - Multifamily / condo / mix-use are preferred residential developments potentials along the corridor. - There is a strong demand for I-2 (heavy industrial) sites, office/retail low demand. - Doggy Daycare / tag sale facility should be considered for redevelopment.	

1.08	From traffic perspective: - Southington would like to see 2 lanes in each direction with shared left turn lane & shoulders. This is to address bottlenecks. 2 south lanes are important for the stretch between ESPN & N Executive Blvd. - Considerations should be given for better pedestrian facilities and off road – such as discussion with power line company to engage in shared trail for bikes/peds - Walkability around ESPN should be considered with better pedestrian facilities around the area.	

The foregoing constitutes BL Companies understanding of matters discussed, issues to be addressed, and parties responsible for said issues and conclusions reached. Should any attendees disagree with the content or items indicated above, please advise, in writing, no more than three (3) calendar days following the date of this record of the meeting.

Prepared by:

P. Padlo

Pat Padlo PE, PTOE

Submitted by:

Michael Dion PE, PTOE

Approved by:

Christian Meyer

Christian Meyer

Architecture
Engineering
Environmental
Land Surveying
Companies

An Employee-Owned Company

JOB MEETING MINUTES

PROJECT NUMBER:	**1901992**	**MEETING NO.**	**2.2**
PROJECT NAME:	**CT Route 229 Corridor Study**		
DATE OF MEETING:	01/07/2021	**DATE OF ISSUE:**	01//07/2020

CLIENT:	**NVCOG**
NAME:	**Christian Meyer**
ADDRESS:	49 Leavenworth Street, 3rd Floor
	Waterbury, Connecticut 06702
PHONE NUMBER:	203-489-0367

Project Team:

NAME	TITLE	FIRM OR AGENCY	PHONE	EMAIL
Christian Meyer	Project Manager	NVCOG		
Justin Malley	Director of Economic & Community Development	City of Bristol		
Mike Dion	Project Manager	BL Companies		
Pat Padlo	Deputy Project Manager	BL Companies		
Katie Klose	Project Engineer	BL Companies		
David Williams	Market Analyst	The Williams Group Real Estate Advisors		
Susan Olivier	Market Analyst			

DISTRIBUTION TO ALL ATTENDEES AND THE FOLLOWING:

ITEM NO.	DESCRIPTION	ACTION BY
1.01	General introduction of call participants and project team	No action needed
1.02	Several major traffic generators and proposed developments were discussed during the call. Two major Industrial Parks were identified:	No action needed

	• Technology Park:
	  o Covanta
	  o Double Tree
	  o Amazon
	  o Otis Tower
	• Business Park Drive (behind ESPN)
	  o CT/Mass PODs distribution and 5 completed smaller manufacturing there are another 4 in development now smaller side (10k to 15k sq ft industrial type uses)
	  o Sale agreements for 2 lots and pending 2 others (south east Bristol park	

1.03	Currently under development / construction the following sites were identified: - "Sandy area" on Google Earth off Pine St and Middle St will have 130 unit build for active adult unit housing – CALAMAR - Hotel and banquet facility in the industrial park - ESPN possibility of expansions and/or maintaining campus - Centurion Plaza Land Use change / Expansion - Northern segment of 229 is residential area and has no room for expansion.	No action needed

1.04	894 Middle Street (near and dear to Bristol) - 17acre site was discussed extensively.
	• Zoned IP (Industrial Park zone) for Manufacturing, Distribution Centers, commercial, and/or ecommerce but could be opened to other uses say residential.
	• City owned & working on abatement from contamination. $1.3M State grant to clean it… DEEP and PCB trigger federal (EPA)
	• No sign off yet from EPA, and could potentially receive certificate for being cleaned to residential standard
	• Goals for parcel: create jobs, bring back tax revenue, or possible entertainment site.
	• Some concepts discussed:
	  o Original concept for ESPN use or their Vender
	  o Near Lake Compounce (Tourism)
	  o Mix-use development
	  o Large luxury apartments which would need further EPA
	  ▪ Market rate units; smaller to target singles target ESPN
	  • Mixed use development
	  • Urban Flight – lifestyle residential
		No action needed

	▪ Split towards and against residential development ▪ Concern with proximity to Southington and losing commerce to those businesses. • The 17 acres should be kept together as such larger sites are rare in the city of Bristol. • Marketing has not been done yet o RFP for site analysis and package to have ready to submit ▪ Distribution ▪ Residential / Multi Family o Team up with third party to help with market across country o If residential, concern with proximity to Southington and losing business to those businesses.	
1.05	Highest traffic counts (intersection Pine Street and Middle street (Aldi's). Highest congestion and accidents are also observed at the intersection. - Safety & access management along the corridor was discussed as major concern. Traffic calming solutions will be reviewed	No action needed
1.06	Bristol strength has been and continues to be industrial / manufacturing town with "blue collar" residential base.	No action needed
1.07	Bristol caters to smaller businesses with 10-15K Sq Ft developments.	No action needed
	Bristol would like to ensure they attract diverse multi-family households (single, couple, 3+, etc.)	
1.08	The proposed mix use developments would act as mini-HUBs	
1.09	From traffic perspective: - Safety & access management along the corridor was discussed as major concern. Traffic calming solutions will be reviewed - Considerations should be given for better pedestrian facilities and off road - Walkability around ESPN should be considered with better pedestrian facilities around the area. - Pine Street intersection and the surrounding area is most congested area with high accident rates – it should be considered as one of the hot spots for closer review.	

The foregoing constitutes BL Companies understanding of matters discussed, issues to be addressed, and parties responsible for said issues and conclusions reached. Should any attendees disagree with the content or items indicated above, please advise, in writing, no more than three (3) calendar days following the date of this record of the meeting.

Prepared by:

P. Padlo

Pat Padlo PE, PTOE

Submitted by:

Michael Dion PE, PTOE

Approved by:

Christian Meyer

Christian Meyer

Architecture
Engineering
Environmental
Land Surveying
Companies

An Employee-Owned Company

JOB MEETING MINUTES

PROJECT NUMBER:	**1901992**	**MEETING NO.**	**2.3**
PROJECT NAME:	**CT Route 229 Corridor Study**		
DATE OF MEETING:	01/07/2021	**DATE OF ISSUE:**	01//07/2020

CLIENT:	**NVCOG**
NAME:	**Christian Meyer**
ADDRESS:	49 Leavenworth Street, 3rd Floor
	Waterbury, Connecticut 06702
PHONE NUMBER:	203-489-0367

Project Team:

NAME	TITLE	FIRM OR AGENCY	PHONE	EMAIL
Christian Meyer	Project Manager	NVCOG		
Justin Malley	Director of Economic & Community Development	City of Bristol		
Mike Dion	Project Manager	BL Companies		
Pat Padlo	Deputy Project Manager	BL Companies		
Katie Klose	Project Engineer	BL Companies		
David Williams	Market Analyst	The Williams Group Real Estate Advisors		
Susan Olivier	Market Analyst			

DISTRIBUTION TO ALL ATTENDEES AND THE FOLLOWING:

ITEM NO.	DESCRIPTION	ACTION BY
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	  o Covanta
	  o Double Tree
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	  o Otis Tower
	• Business Park Drive (behind ESPN)
	  o CT/Mass PODs distribution and 5 completed smaller manufacturing there are another 4 in development now smaller side (10k to 15k sq ft industrial type uses)
	  o Sale agreements for 2 lots and pending 2 others (south east Bristol park	

1.03	Currently under development / construction the following sites were identified: - "Sandy area" on Google Earth off Pine St and Middle St will have 130 unit build for active adult unit housing – CALAMAR - Hotel and banquet facility in the industrial park - ESPN possibility of expansions and/or maintaining campus - Centurion Plaza Land Use change / Expansion - Northern segment of 229 is residential area and has no room for expansion.	No action needed

1.04	894 Middle Street (near and dear to Bristol) - 17acre site was discussed extensively.
	• Zoned IP (Industrial Park zone) for Manufacturing, Distribution Centers, commercial, and/or ecommerce but could be opened to other uses say residential.
	• City owned & working on abatement from contamination. $1.3M State grant to clean it… DEEP and PCB trigger federal (EPA)
	• No sign off yet from EPA, and could potentially receive certificate for being cleaned to residential standard
	• Goals for parcel: create jobs, bring back tax revenue, or possible entertainment site.
	• Some concepts discussed:
	  o Original concept for ESPN use or their Vender
	  o Near Lake Compounce (Tourism)
	  o Mix-use development
	  o Large luxury apartments which would need further EPA
	  ▪ Market rate units; smaller to target singles target ESPN
	  • Mixed use development
	  • Urban Flight – lifestyle residential
		No action needed

	▪ Split towards and against residential development ▪ Concern with proximity to Southington and losing commerce to those businesses. • The 17 acres should be kept together as such larger sites are rare in the city of Bristol. • Marketing has not been done yet o RFP for site analysis and package to have ready to submit ▪ Distribution ▪ Residential / Multi Family o Team up with third party to help with market across country o If residential, concern with proximity to Southington and losing business to those businesses.	
1.05	Highest traffic counts (intersection Pine Street and Middle street (Aldi's). Highest congestion and accidents are also observed at the intersection. - Safety & access management along the corridor was discussed as major concern. Traffic calming solutions will be reviewed	No action needed
1.06	Bristol strength has been and continues to be industrial / manufacturing town with "blue collar" residential base.	No action needed
1.07	Bristol caters to smaller businesses with 10-15K Sq Ft developments.	No action needed
	Bristol would like to ensure they attract diverse multi-family households (single, couple, 3+, etc.)	
1.08	The proposed mix use developments would act as mini-HUBs	
1.09	From traffic perspective: - Safety & access management along the corridor was discussed as major concern. Traffic calming solutions will be reviewed - Considerations should be given for better pedestrian facilities and off road - Walkability around ESPN should be considered with better pedestrian facilities around the area. - Pine Street intersection and the surrounding area is most congested area with high accident rates – it should be considered as one of the hot spots for closer review.	

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Prepared by:

P. Padlo

Pat Padlo PE, PTOE

Submitted by:

Michael Dion PE, PTOE

Approved by:

Christian Meyer

Christian Meyer

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JOB MEETING MINUTES

PROJECT NUMBER:	**1901992**	**MEETING NO.**	**3**
PROJECT NAME:	**CT Route 229 Corridor Study**		
DATE OF MEETING:	01/18/2021	**DATE OF ISSUE:**	01/20/2020

CLIENT:	**NVCOG**
NAME:	**Christian Meyer**
ADDRESS:	49 Leavenworth Street, 3rd Floor
	Waterbury, Connecticut 06702
PHONE NUMBER:	203-489-0367

Project Team:

NAME	TITLE	FIRM OR AGENCY	PHONE	EMAIL
Christian Meyer	Project Manager	NVCOG		
Larry Gorneault	General Manager	Lake Compounce (LC)		
Mike Dion	Project Manager	BL Companies		
Pat Padlo	Deputy Project Manager	BL Companies		
Derek Kohl	Executive Director of Engineering	BL Companies		

DISTRIBUTION TO ALL ATTENDEES AND THE FOLLOWING:

ITEM NO.	DESCRIPTION	ACTION BY
1.01	General introduction of call participants and project team	No action needed
1.02	Safety & access management along the Route 229 corridor and Lake Avenue was discussed as major concern: - Lake Ave. crossing for employees is always a safety concern with near misses and recorded accidents. Would like to see better signage and some remediation of the issue. (additional yield/stop sign/ flashing lights) Willing to work with the town to solve the issue. Part of the problem is the crossing is located on a curve with sight line issues. Frequently light pole gets struck by distracted drivers.	No action needed

	- Wayfinding – better and bigger signage to the establishment is requested. Existing signage can get overgrown by shrubs and LC has no control to clear it. Would like to investigate variance for bigger signage and additional signage along Route 72 & elsewhere.
	  o Signage on both sides off Route 229 prior to Enterprise Rd
	  o Existing sign on S Enterprise Dr. hardly visible from Middle St NB lanes.
	- Ongoing problem with GoogleMaps / Waze / MapQuest. All provide directions to incorrect location to access parking facilities.
	- Additional illumination is desired. Southern segment of the corridor south of Enterprise Drive seems dark.	

1.03	These locations were observed with traffic issues: - I-84 EB exit 31, double left backs up consistently during peak hours. This continues all the way to Enterprise Drive where clients take another left. - Intersection of Middle Street and Enterprise Drive - NB left queues beyond dedicated turn lane. - These congested conditions are exacerbated during summer holidays such as Memorial Day, July4th, and Labor Day.	No action needed
1.04	Majority of employees are seasonal. They reside in surrounding towns: Bristol, Southington, Terryville, Plainville, Forestville, and even New Britain. The positions are minimal wage and majority of employees drive to site. Transit option is currently unattractive as the closest transit stop is at the corner of Route 229 @ Pine St, 1.7 miles away. Biking facility would be a more attractive option.	No action needed
1.05	Due to Covid-19, LC suffered major losses. Their operations were capped at 25% capacity and half of the staff is on furlough. LC might be used as a rapid vaccination site / testing site due to its unique parking facility set up that could accommodate large volumes of vehicles. Discussions with local officials currently take place.	No action needed
1.06	In 2021 LC will celebrate 175th year Anniversary. Planning for normal / Covid-19 free year are taking place.	No action needed
1.07	Biking facilities – trails and bike lanes are desired to accommodate campers.	No action needed
1.08	Top priorities LC would like to be addressed: "Service and efficiency" –the two congested points (i-84 ramps and Enterprise Drive) congestion and mobility will be evaluated "Illumination and signage"- additional LC signs their visibility and better illumination along the corridor.	No action needed

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Prepared by:

P. Padlo

Pat Padlo PE, PTOE

Submitted by:

Michael Dion PE, PTOE

Approved by:

Christian Meyer

Christian Meyer

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JOB MEETING MINUTES

PROJECT NUMBER:	**1901992**	**MEETING NO.**	**4**
PROJECT NAME:	**CT Route 229 Corridor Study**		
DATE OF MEETING:	01/25/2021	**DATE OF ISSUE:**	01/28/2020

CLIENT:	**NVCOG**
NAME:	**Christian Meyer**
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	Waterbury, Connecticut 06702
PHONE NUMBER:	203-489-0367

Project Team:

NAME	TITLE	FIRM OR AGENCY	PHONE	EMAIL
Christian Meyer	Project Manager	NVCOG		
Brian Stolz	General Manager	Winterberry Gardens (WG)		
Cara Radzins	Transportation Deputy	CRCOG		
Anna Bergeron	Transportation Planner	CTDOT		
Pat Padlo	Deputy Project Manager	BL Companies		

DISTRIBUTION TO ALL ATTENDEES AND THE FOLLOWING:

ITEM NO.	DESCRIPTION	ACTION BY
1.01	General introduction of call participants and project team	No action needed
1.02	- Due to Covid-19, Winterberry Gardens (WG) did not suffer any major decline in sales/ revenues. Early on they have developed safety protocols to ensure safe work / retail environment and robust IT infrastructure for online business and remote work. 60% of office staff is only present at any given time. - Traffic, due to Covid-19 has decreased substantially along the corridor but since fall/winter has returned to normal.	No action needed
1.03	During peak operations (April-October) there are 145 employees on site – plus customers. - During weekday: 10-15 at any given time - During weekend: 50-60 – maxing out their parking lot.	No action needed

	- Anticipate growth by 15-20% to site or off site. Their current site is at capacity and may need to acquire additional land in the corridor or off site. - Some discussion about 2080 West St residential property in front of WG. - WG would like obtain easement rights into the Driveway north of their property. Ideally if this property driveway would intersect at ESPN signal. - During summer weekend operations Lake Compounce traffic is noticeable, especially during "lightening events"	
1.04	Safety & access management along the Route 229 corridor and near WG was discussed as major concern: - Any left turns (in/out) are challenging - WG is located at the merge of 2-SB lanes into 1 lane – inherit friction/congestion point with lots of accidents. - The access driveway is metered by Cumberland Farms signal (to the south) that may not be coordinated with ESPN Driveway signal (to the north). o Concern with near misses and recorded accidents. (Willing to work with the city to solve the issue) - WG made attempt to obtain easement rights into the Driveway north of their property. Currently the property is owned by the City of Bristol. In future, they still would like to obtain access via the driveway but having it realigned to ESPN signal. - Seneca Road with Indian Trail connection to Supreme Forrest Products and W. Queens St is a non-starter for additional access/egress. Seneca Road serves 3-4 residentials lots and great care is given to maintain their privacy. - Additional SB lane or signal is desired. Possibly a dedicated turn lane, - Brian suggested pavement markings from blocking the intersection/driveway.	No action needed
1.05	Multimodal amenities such as sidewalk or bike lane would not assist their business market / revenue. WG doesn't believe the corridor is met for such modes.	No action needed
1.06	For future developments, WG would like more commercial / industrial vs residential. (with current congestion residential developments/ living becomes less attractive.) The business should reflect local / smaller developments that are not large bigbox / franchise businesses. A warning of what not to do – Queen St (Rt-10) and its congestion. Also, the businesses should not generate heavy vehicle traffic.	No action needed
1.07	WG observed the change in the corridor over the last 14 years, with developments near I-84 and still some available land on	No action needed

	the Southeast corner of the corridor. Latest, developer near Cava has been investing in expansion. Minimal restaurant choices availability along the corridor.	
1.08	Top priorities WG would like to be addressed: "Congestion & Safety" – Merge point in SB direction should be evaluated for improvements.	No action needed

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Prepared by:

P. Padlo

Pat Padlo PE, PTOE

Submitted by:

Michael Dion PE, PTOE

Approved by:

Christian Meyer

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JOB MEETING MINUTES

PROJECT NUMBER:	**1901992**	**MEETING NO.**	**5**
PROJECT NAME:	**CT Route 229 Corridor Study**		
DATE OF MEETING:	01/28/2021	**DATE OF ISSUE:**	01/28/2020

CLIENT:	**NVCOG**
NAME:	**Christian Meyer**
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PHONE NUMBER:	203-489-0367

Project Team:

NAME	TITLE	FIRM OR AGENCY	PHONE	EMAIL
Christian Meyer	Project Manager	NVCOG		
Michael Dietter	Deputy Superintendent of Schools	Board of Education		
Michael Higgins	Principal of BEHS	Bristol Eastern High School (BEHS)		
Mike Dion	Project Manager	BL Companies		
Pat Padlo	Deputy Project Manager	BL Companies		

DISTRIBUTION TO ALL ATTENDEES AND THE FOLLOWING:

ITEM NO.	DESCRIPTION	ACTION BY
1.01	General introduction of call participants and project team	No action needed
1.02	Covid-19 had impacted school operations. Kids are in school 4 out of 5 days. At any point only 1/3 of school normal population is in the building, all after school programs have been suspended.	No action needed
1.03	During a normal school year, the following is true: - School busses start to arrive around 7:15am, there are 15 normal and 5-6 special program buses. - School starts at 7:35am and classes end at 2:05pm - At 1:50pm busses start to arrive for pick up and leave by 2:10am. Late bus is for 3:15pm.	

	- 1/3 of school population walks to school. Note average year there are 1200 students' total. Students qualify for bus services living outside of 2 mile radius. There are minimal number of cyclist students potentially due to unsafe roadway conditions. - There are 100-150 student drivers every year. They park/access through the back. - There are 200 staff members: teachers, admin, etc.	
1.04	There are three access/egress points to school: - Via King Street - Via Morris Ave (back) - Via Spark Ave (South) King Street is the main access point that buses use.	
1.05	Safety & access management along the Route 229 corridor and near BEHS was discussed as major concern: - Any left turns (in/out) are challenging – request for signalized left turn lane during peak school hours. - Page Park is utilized by students, request for better connection with parking on the right land side of Kings St. - Page Park is utilized by Park & Rec whole year and special programs during summer months. - Sidewalks on both sides of the roadway and more crosswalks are requested. Continuous sidewalks on both sides to Pine St. going south. - Intersection of King St @ US6 is very dangerous for pedestrians – no continuous sidewalk, crosswalk bars, and crosswalk push buttons. Lot of students live/walk from Davis Dr & Vance Dr. - Woodland Street is also a tricky intersection for walkers to navigate. - Illumination near school is adequate but would like improved through residential area. - would like to see widening or roadway or at minimum provide left turn lane storage space. - A suggestion for pavement markings to prevent blocking the intersection/driveway.	No action needed
1.06	BEHS is a school zone and would like to see appropriate posted speed limit (25mph).	No action needed
1.07	For future developments, BEHS has been observing the corridor growth in the south (Southington area) and how there are two main land use types: commercial and industrial with ESPN Campus. They would like to see more balanced growth that would include local restaurants and small businesses.	No action needed
1.08	Bristol Memorial School (at Memorial Blvd) is a historical school (high school, middle school, and now magnet art school) should open its doors to students in fall of 2021 and for public	No action needed

	gatherings even sooner. It has a historical theater that can sit 400 people. Traffic on Memorial Blvd and Riverside Ave should be considered in future assessments.	
1.09	Top priorities WG would like to be addressed: "Congestion & Safety" – sidewalks, left turn lanes/ retiming signal.	No action needed

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Prepared by:

P. Padlo

Pat Padlo PE, PTOE

Submitted by:

Michael Dion PE, PTOE

Approved by:

Christian Meyer

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JOB MEETING MINUTES

PROJECT NUMBER:	**1901992**	**MEETING NO.**	**6**
PROJECT NAME:	**CT Route 229 Corridor Study**		
DATE OF MEETING:	02/02/2021	**DATE OF ISSUE:**	02/02/2020

CLIENT:	**NVCOG**
NAME:	**Christian Meyer**
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Project Team:

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Pat Padlo	Deputy Project Manager	BLC	203-605-2588	ppadlo@Blcompanies.com

DISTRIBUTION TO ALL ATTENDEES AND THE FOLLOWING:

ITEM NO.	DESCRIPTION	ACTION BY
1.01	General introduction of call participants and project team	No action needed
1.02	Covid-19 had impacted ESPN Operations. The usual day workforce of 3,000 employees on campus currently ranges between 350-500 employees. During Covid-19, 300 employees, about 6 percent of its worldwide staff were laid off. The employees enjoy the "blended" opportunity of working from home and/ or office and this may extend beyond pandemic measures.	No action needed
1.03	- ESPN operates "24hrs-7days a week-365 day in a year" There is no high / low seasons as there is a sport(s) to be covered year-round. Employees work on various shifts and the campus is active 24-hours. - The ESPN operations are 90% on the main campus and 10% on the northern campus. There is a shuttle service between the two campuses that runs every 20-30 minutes with space for 13 passengers. (currently nonoperational) - There is no assigned parking and all spaces are shared. - The ESPN Kidscenter on Enterprise Dr. serves approximately 250 children of employees and as a gathering space as needed. - There are multiple access points to the main campus: ESPN Dr, Ronzo Rd., and Birch St. Similarly, the north Campus has several access points from route 229, Redstone Hill Road, and Business Park Road. - Employees reside around the area and beyond Bristol / Southington. There are employees traveling from distances such as shoreline, Glastonbury, and Fairfield. (all directions)	
1.04	Safety & access management along the Route 229 corridor and near ESPN was discussed as major concern: - In front of the ESPN campuses 5 ft wide sidewalks are present, however there is no sidewalk present across Route 229. There are no crosswalks and pedestrians are discouraged from crossing the road. Existing sidewalk in front of main gate is mostly utilized by protestors. - Route 229 is 5 lanes wide which can be challenging for pedestrian to cross with high speed vehicles. In the past, an ESPN employee was fatally injured while attempting to cross the road to McDonalds. (prior to 2010 based on google earth) A suggestion for pedestrian bridge was made.	No action needed

	- There are multiple access points to both campuses. Employees are aware of the peak congestion times and when possible try to avoid it. There are no observed backups /spills into Route 229 from ESPN campuses.	
1.05	- Multimodal amenities such as transit route, sidewalk network or bike lanes would not assist their business market / revenue/ employees. ESPN doesn't believe the corridor is meant for such modes. Recreational bike trail would be welcomed. ESPN as a part of the Walt Disney family strives for sustainability, environmental stewardship, and community engagement. - Some staff members utilize share-a-ride program and campus provides EV charging stations. -In the past, the city of Bristol was approached to develop a bike trail connecting to Dolphin Street – ESPN would like to see a connection to Farmington Canal Heritage Trail. - ESPN has offices in NY, Texas, Florida, etc. and looked into shuttle services connecting to rail and air for employees frequently traveling between the national campuses.	No action needed
1.06	During Summer month operations, Lake Compounce traffic is noticeable. Morning traffic backs up in the northbound direction, evening traffic backs up in southbound direction.	No action needed
1.07	Congestion / Delay / Safety concerns: - Intersection of Middle St @ Pine St (by ALDI) is very congested and vehicles experience delay. - Intersection of West St @ Welch Rd is another congested spot "choke point" - Intersection of West St @ Curtis Street is congested when SB left turn vehicles are not queued up far left, blocking the thru movement. (there is no left turn storage lane) - Intersection of King St @ US6 is "brutal" between 5pm and 6:30pm. - would like to see widening or roadway or at minimum provide left turn lane storage space.	No action needed
1.08	For future developments, ESPN has been observing the corridor growth in the south (Southington area) and how there are two main land use types: commercial and industrial. - The business should reflect local / smaller developments that are not large big-box / franchise businesses. - A warning of what not to do – Queen St (Rt-10) and its congestion. A general interest was in a sport complex development. - A substation for Eversource power grid was proposed in the past. - There are several hotels build in the corridor. ESPN guest utilize hotels along the corridor and I-84.	No action needed

1.09	Top priorities ESPN would like to be addressed: "Congestion & Safety" – left turn lanes and retiming signal.	No action needed

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Prepared by:

P. Padlo

Pat Padlo PE, PTOE

Submitted by:

Michael Dion PE, PTOE

Approved by:

Christian Meyer

Christian Meyer

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JOB MEETING MINUTES

PROJECT NUMBER:	**1901992**	**MEETING NO.**	**7**
PROJECT NAME:	**CT Route 229 Corridor Study**		
DATE OF MEETING:	02/02/2021	**DATE OF ISSUE:**	02/11/2020

CLIENT:	**NVCOG**
NAME:	**Christian Meyer**
ADDRESS:	49 Leavenworth Street, 3rd Floor
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PHONE NUMBER:	203-489-0367

Project Team:

NAME	TITLE	FIRM OR AGENCY	PHONE	EMAIL
Christian Meyer	Project Manager	NVCOG		
Cara Radzins	Transportation Deputy	CRCOG		
Chief Jack Daly		Police of Southington		
Keith Egan	Operations Commander	Police of Southington		
Police of Southington		Police of Southington		
Robert Phillips	Director	Director, Planning & Community Development		
Chief William Palmieri		Police of Southington		
David Schneider	Traffic/Fleet Officer	Police of Southington		
James Paul		Fire Department		
Mike Dion	Project Manager	BLC		
Pat Padlo	Deputy Project Manager	BLC		
Katie Klose	Traffic Engineer	BLC		

DISTRIBUTION TO ALL ATTENDEES AND THE FOLLOWING:

ITEM NO.	DESCRIPTION	ACTION BY
1.01	General introduction of call participants and project team	No action needed
1.02	Covid-19 had impacted Route 229 operations, however within the year, traffic volumes have steadily increased and are back to normal. Backups are observed during peak hours possibly by commuters.	No action needed
1.03	Several intersections in the Town of Southington have been identified as hot spots and in need of improvements: - The intersection of Curtiss Street is signalized however it backs up in the southbound direction. An exclusive southbound left turn lane would be desired - The intersection with W. Pine Drive – the eastbound movement has a steep grade and possible sight line issues. Vehicles encounter issues trying to turn left into northbound CT Route 229. Residents prefer to travel via Oakmont Way, Pinehurst Crossing, and N Ridge Ct to Welch Road to take a left into northbound via signalized intersection. Discussion ensued to see if a sign can be placed "No Left Turn" – a prohibition for safety reasons. Consideration could be made to have it under one coordinated signal with Spring Street. - The intersection with Churchill Street – a possible northbound left lane would be desirable.	No action needed
1.04	Congestion on CT Route 229 poses safety concerns especially in the southbound direction. Two through lanes or at a minimum exclusive left turn lane at unsignalized intersection are desirable. Wide shoulders for the EMS responders. Shared center lane / two-way left-turn lane is not desirable.	No action needed
1.05	When discussing multimodality, the corridor should not be considered to provide bike lanes within roadway. It was noted, a nearby -"Rail to Trail" will be extended. CT 229 segments would serve as a connection to "Rail to Trail" and local residential roads. Sidewalks will continue to be built with new developments along the corridor. Route 229 can be 5-6 lanes wide in some stretches, which can be challenging for a pedestrian to cross with high speed vehicles.	No action needed
1.06	The vacant land to the south of West Queen Street should consider access via T-ed off intersection with Welch Street. W. Queen Street is already over congested.	No action needed
1.07	During Summer month operations, Lake Compounce traffic is noticeable. Morning traffic backs up in the northbound direction, evening traffic backs up in southbound direction.	No action needed
1.08	For future developments, the departments have been observing the corridor growth in the Southington area and the	No action needed

	impacts to main land use types: residential, commercial, and industrial. Regardless of the type of development, more trips on CT Route 229 will be observed and congestion along with it. Left turn lanes and general widening would be desired however avoidance of becoming "Queen Street" should be considered in plans.	

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Prepared by:

P. Padlo

Pat Padlo PE, PTOE

Submitted by:

Michael Dion PE, PTOE

Approved by:

Christian Meyer

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JOB MEETING MINUTES

PROJECT NUMBER:	**1901992**	**MEETING NO.**	**8**
PROJECT NAME:	**CT Route 229 Corridor Study**		
DATE OF MEETING:	02/25/2021	**DATE OF ISSUE:**	03/03/2021

CLIENT:	**NVCOG**
NAME:	**Christian Meyer**
ADDRESS:	49 Leavenworth Street, 3rd Floor
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PHONE NUMBER:	203-489-0367

Project Team:

NAME	TITLE	FIRM OR AGENCY	PHONE	EMAIL
Mark Nielsen	Director of Planning	NVCOG		
Christian Meyer	Project Manager	NVCOG		
Cara Radzins	Transportation Deputy	CRCOG		
Michael Duval	Lieutenant	Bristol Police		
Joseph Ouellette	Sergeant, Traffic Division	Bristol Police		
Mike Dion	Project Manager	BLC		
Pat Padlo	Deputy Project Manager	BLC		

DISTRIBUTION TO ALL ATTENDEES AND THE FOLLOWING:

ITEM NO.	DESCRIPTION	ACTION BY
1.01	General introduction of call participants and project team.	No action needed
1.02	Covid-19 had impacted Route 229 operations, however within the year, traffic volumes have steadily increased and have almost been back to normal since August '20. Backups are observed during peak hours possibly by commuters.	No action needed
1.03	Several intersections in the City of Bristol have been identified as hot spots for several reasons:	No action needed

	- The intersection with Pine Street and Riverside Street continues to experience high volumes, delays, and high crash rates. During congested peak periods vehicles can stay in queue for two-three cycles. - Near Intersection with Burnside Avenue a fatal pedestrian crash occurred. Since, striped crossings and additional signs were posted. In general, this area is residential and frequented by young pedestrians. Ensuring continuous sidewalks on east side and on westside between Kingwood Dr and Burnside Ave. - the unsignalized Woodland Street intersection has no sight lines due to steep grade and horizontal curve. Further west on Woodland Street the intersection with Daniel Road & Holley Road also has similar issues and high crash rates. - North and south of intersection with Redstone Hill Road / Cross Street high speeds have been observed. Possible traffic calming should be considered.	
1.04	- Intersection with Moody Avenue & Louisiana Avenue has received attention, however additional analysis disproved any need for improvements such as additional turn lanes and changes to signal timings. - Similarly, when asked about the intersection with Page Park and BEHS, no operational issues have been observed.	No action needed
1.05	Congestion on CT Route 229 poses safety concern. Wide shoulders for the EMS responders should be provided. When discussing widening of roadway, increase in speed was a concern.	No action needed
1.06	When discussing multimodality, the corridor should not be considered to provide bike lanes within roadway. Bike lanes should be considered as part of network and not stand-alone segments. Due to high vehicular volumes, consideration should be given to off-roadway cycle track. For pedestrians, a continuous safe sidewalk should be considered with ADA accommodations and proper illumination.	No action needed
1.07	The former McDonald's site across from ESPN is currently occupied by Amazon as their overflow lot.	No action needed
1.08	During Summer month operations, Lake Compounce traffic is noticeable. Morning traffic backs up in the northbound direction, evening traffic backs up in southbound direction.	No action needed
1.09	For future developments, regardless of the type of development, more trips on CT Route 229 will be observed and congestion along with it. Safety and congestion should be primary concern.	No action needed
1.10	Following up the video call, Bristol police provided additional information on illumination via email:	No action needed

	"… The first is the section of King Place at the intersection with Farmington Avenue. King Place does consist of a total of four lanes of travel with a small raised median dividing north and south traffic at the intersection. There are no overhead lights on either side of King Place. The first streetlight noted is on the east side of King Street near the Family Eye Care at number 780. *The second area was near the parking lot on Middle Street for Casey Field. This lot has two entrance / exits onto Middle Street and is across from West Gate.* *As discussed, I believe the issue of sidewalks on both sides of King Street are important especially in the residential areas from Farmington Avenue to the Broad Street intersection. There are sidewalks on the east side of the northbound lane for this entire distance but nothing on the west side curb of the southbound lane."*	

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Prepared by:

P. Padlo

Pat Padlo PE, PTOE

Submitted by:

Michael Dion PE, PTOE

Approved by:

Mark C. Nielsen

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JOB MEETING MINUTES

PROJECT NUMBER:	**1901992**	**MEETING NO.**	**9**
PROJECT NAME:	**CT Route 229 Corridor Study**		
DATE OF MEETING:	03/18/2021	**DATE OF ISSUE:**	03/23/2021

CLIENT:	**NVCOG**
NAME:	**Mark Nielsen**
ADDRESS:	49 Leavenworth Street, 3rd Floor
	Waterbury, Connecticut 06702
PHONE NUMBER:	203-489-0367

Project Team:

NAME	TITLE	FIRM OR AGENCY	PHONE	EMAIL
Mark Nielsen	Director of Planning	NVCOG		
Anna Bergeron	Transportation Planner	CTDOT		
Ellen Zoppo-Sassu	Mayor	City of Bristol		
Justin Malley	DECD	City of Bristol		
Mark Flynn	Acting Chief	Fire Dept.		
Todd Cutler	Lieutenant	Fire Dept.		
Derek Kohl	Executive Director of Engineering	BL Companies (BLC)		
Pat Padlo	Deputy Project Manager	BLC		

DISTRIBUTION TO ALL ATTENDEES AND THE FOLLOWING:

ITEM NO.	DESCRIPTION	ACTION BY
1.01	General introduction of call participants and project team.	No action needed
1.02	Covid-19 had impacted Route 229 operations, however within the year, traffic volumes have steadily increased and have almost been back to normal. Usual backups are observed during peak hours possibly by commuters. It was noted that several large employers do not operate at full capacity.	No action needed
1.03	Several intersections in the City of Bristol have been identified as hot spots for several reasons: - The intersection with Pine Street and Riverside Street continues to experience high volumes, delays, and high crash rates.	No action needed

	This is compounded by the lack of coordination between the intersections of Broad St, Riverside Avenue, Pine Street / Mountain Road, and Lake Avenue becomes more apparent. Pine Street is also one of the roads that serves transit lines, which can disrupt peak hours operations through stopping/ blocking right lane. - Stretch of King Street between 1st Street and 4th Street is the narrowest with one travel lane and limited shoulder width of 1-2 ft. This area is challenging for EMS vehicles to assist in any crash or for any vehicle movement disruption. A more accommodating shoulder would be welcomed. - Woodland Street – both signalized and unsignalized piece has substandard sight lines due to steep grade and horizontal curve. Further west on Woodland Street the intersection with Daniel Road & Holley Road also has similar issues and high crash rates including pedestrian involved crashes. - West Washington Street widen to accommodate turning vehicles and increasing traffic. - North and south of intersection with Redstone Hill Road / Cross Street high speeds have been observed, making it challenging for smaller side road traffic to merge properly. Similarly, the intersection with Pine Brook Terrace.	
1.04	The Fire Engine #4 located at 18 Vincent P Kelly Rd, would like for better access to the corridor to ensure quickest response in emergencies. Also, it was noted that during food drives at the station, people complain about the access / egress to Rt 229.	No action needed
1.05	Congestion on CT Route 229 poses safety concern. Wide shoulders for the EMS responders should be provided. When discussing widening of roadway, the stretch of King Street between 1st Street and 4th Street is of concern as is W. Washington St.	No action needed
1.06	When discussing multimodality, the corridor should not be considered to provide bike lanes within roadway. Bike lanes should be considered as part of network and not stand-alone segments. Currently to the west of the corridor, Bristol is studying bike trail network and Pequabuck Riverfront recapture. The study includes Riverside Avenue and Memorial Blvd.	No action needed
1.07	Bus routes and bus services are of concern and how better they could service the communities. Bus shelters and better signage for existing routes are desired. A discussion ensued about recent CT*transit* bus study and how it related to present conditions near industrial park and extending services through City of Bristol. For bus shelters, the town is concerned with the cost of purchasing new and where the costs of maintenance and repair will come from. Also, the style of potential bus shelters to include "open air" concepts.	No action needed

	For sidewalks, there are several areas that should be considered for improvements: -the segment between Lake Avenue and Battisto Road requires sidewalk on the west side -the segment between 6th Street and north of New Street requires sidewalk on the eastside to provide continuity for pedestrians. - the segments along Woodland St has asphalt sidewalk in poor condition with no ADA. - the segment by Page Park on the westside to provide better connection to Bristol Eastern High School and Stafford Elementary School.	
1.08	The Amazon vehicles have a significant presence at the corridor during all hours. Currently, the former McDonald's site across from ESPN is occupied by Amazon as an off-site remote parking lot from their facility in the Southeast Bristol Industrial Park (adjacent to ESPN north campus).	No action needed
1.09	For future developments, regardless of the type of development, more trips on CT Route 229 will be observed and congestion along with it. Safety and congestion should be primary concern. The City of Bristol would like to ensure the growth of business along the corridor with the industrial parks while balancing potential improvements that are necessary for safety, operations and multi-modes of transportation.	No action needed

The foregoing constitutes BL Companies understanding of matters discussed, issues to be addressed, and parties responsible for said issues and conclusions reached. Should any attendees disagree with the content or items indicated above, please advise, in writing, no more than three (3) calendar days following the date of this record of the meeting.

Prepared by:

P. Padlo

Pat Padlo PE, PTOE

Submitted by:

Michael Dion PE, PTOE

Approved by:

Mark Nielsen

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JOB MEETING MINUTES

PROJECT NUMBER:	**1901992**	**MEETING NO.**	**10**
PROJECT NAME:	**CT Route 229 Corridor Study**		
DATE OF MEETING:	02/24/2022	**DATE OF ISSUE:**	02/24/2022

CLIENT:	**NVCOG**
NAME:	**Josh Lecar**
ADDRESS:	49 Leavenworth Street, 3rd Floor
	Waterbury, Connecticut 06702
PHONE NUMBER:	203-489-0367

Project Team:

NAME	TITLE	FIRM OR AGENCY	PHONE	EMAIL
Josh Lecar	Project Manager	NVCOG		
Tyler Roth	Transportation Planner	CTDOT		
Brian McLaughlin	Planning Administrator	CT*transit*		
Kevin Ellis		NVCOG		
Pat Padlo	Deputy Project Manager	BL Companies		

DISTRIBUTION TO ALL ATTENDEES AND THE FOLLOWING:

ITEM NO.	DESCRIPTION	ACTION BY
1.01	General introduction of call participants and project team. An overview of the project and next steps from the project team.	No action needed
1.02	Discussion of 2018 New Britain-Bristol Division Comprehensive Service Analysis: Comprehensive Transit Service Analysis | CRCOG Phase 3 proposed bus route changes and their relevance to the CT route 229 corridor study. - Bus Route 542- phase 3 proposed service area includes stretches along 229 to serve: Southington, Target, ESPN , Lake Compounce, various apt complexes: Lakewoods Apts., Pond Ridge Apts., Sandpiper Woods, Pinebrook Apts., and various other developments . The proposed route should reconsider the access to Bristol Hospital and Bristol Downtown from operational perspective.	No action needed

	- An alternative northern path was discussed via King St followed by US Rt6, and Maple St to Bristol Hospital. - Outside of our project area, some concerns that CTtransit has to consider are: topology and maneuverability around Bristol Hospital Memorial Blvd closed off to buses. - Bus Route 102 & 502 – currently the two routes follow similar path (CTfastrak vs Express) however, for future consideration they don't have to be identical. Phase 3 Route 502 proposed service ends at Tunxis Community College while Route 102 remains unchanged. For our corridor study we can reconsider the path of the route to better service the study area. - CT*transit* currently is implementing Bus HUBs at various Park-n-Ride locations. Buckland Mall and Mansfield for example will server as a HUB to various routes with concentrated amenities at the station. The corridor study should consider developing concepts utilizing the Lake Ave @ Middle St or Pike St @ Todd St Park-n-Ride lot. Mr. Brian McLaughlin will look into providing information on Buckland HUB design, costs and amenities. - For the corridor the bus stops should consider various scales of amenities. For HUB location the stop should include: multiple shelters with heated option, variable signage w/ bus route, bike locks/racks, charging station, benches, water fountain, trash/recycle receptacles, AV charger, proper lighting and landscaping, etc.	
1.03	When discussing new bus stop locations: mid-block stop, far-side stop, near-side stop for on street service versus bus pull outs, bus bays can be utilized throughout the corridor. The bus stop type should be selected based on roadway and land use conditions. A concrete pad for bus should be used at high frequency spots.	No action needed

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Prepared by:

P. Padlo

Pat Padlo PE, PTOE

Submitted by:

Michael Dion PE, PTOE

Approved by:

Rich Donovan

Rich Donovan

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JOB MEETING MINUTES

PROJECT NUMBER:	**1901992**	**MEETING NO.**	**2**
PROJECT NAME:	**CT Route 229 Corridor Study**		
DATE OF MEETING:	04/07/2021	**DATE OF ISSUE:**	04/09/2021

CLIENT:	**NVCOG**
NAME:	**Mark Nielsen**
ADDRESS:	49 Leavenworth Street, 3rd Floor
	Waterbury, Connecticut 06702
PHONE NUMBER:	203-489-0367

Project Team:

NAME	TITLE	FIRM OR AGENCY	PHONE	EMAIL
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Gabriel Filer	Project Manager	NVCOG		
Josh LeCar	Assistant Director of Planning	NVCOG		
Cara Radzins	Transportation Deputy	CRCOG		
Anna Bergeron	Transportation Planner	CTDOT		
Raymond Rogozinski	Director of Public Works	City of Bristol		v
Justin Malley	DECD	City of Bristol		
Paul Chaplinsky Jr.	Planning & Zoning Commission	Town of Southington		
David Nourse	Assistant Town Engineer	Town of Southington		
Nancy Levesque	City Engineer / Public Works	City of Bristol		
Derek Kohl	Executive Director of Engineering	BL Companies (BLC)		
Mike Dion	Project Manager	BLC		
Katie Klose	Traffic Engineer	BLC		
Pat Padlo	Deputy Project Manager	BLC	[illegible]	ppadlo@blcompanies.com

DISTRIBUTION TO ALL ATTENDEES AND THE FOLLOWING:

ITEM NO.	DESCRIPTION	ACTION BY
1.01	General introduction of call participants and project team.	No action needed
1.02	BL Companies proceeded with providing a 20-25 min presentation on existing conditions	No action needed
1.03	During presentation a discussion took place to identify possible locations and types of improvements. The list includes: • High Crash Rates and Fatality locations (Separate list) • Continuous Two-Way Left- Turn Lanes (TWLTLs) • Southern Segment: Second southbound lane • Southern Segment: Boulevard • Southern Segment: Signal at West Pine Drive • Southern Segment: Signal at Churchill Street • Central Segment: Signal at Vincent P Kelly Road • Northern Segment: Exclusive left turn lanes • Northern Segment: Continuous / improved pedestrian facilities • Northern Segment: Widening/ wider shoulders • Northern Segment: King Street @ Farmington Avenue • Pedestrian Bridge at Moody Street/ Louisiana Avenue Intersection (The Bristol Press - City Council approves construction project to replace Louisiana Avenue Bridge) • Pedestrian Bridge near ESPN • Pedestrian improvements near segment Route 72 & Pine Street • Monorail along the corridor. • Utilize intersection block stripping to ensure clearance of Spring Street & West Pine Drive (Do not block the box signage) The location with either High Crash Rate (HCR), Pedestrian / Cyclist Crashes (PCC) or Fatal Crashes (FC) were identified to include the following locations: • Route 229 @ Moody Street/ Louisiana Avenue - HCR, FC • Route 229 @ Route 72 - HCR, PBC • Route 229 @ Pine Street - HCR, PBC, FC • Route 229 @ Business Park Road / Battisto Road - FC • Route 229 @ Pine Brook	No action needed
1.04	During Discussion, it was stated that the list should not be made shorter but we should be looking at all locations for improvements to stimulate economic growth, enhance the corridor and improve the overall safety, congestion, and traffic flow.	No action needed
1.05	For future developments, regardless of the type of development, more trips on CT Route 229 will be observed and congestion along with it. Safety and congestion should be primary concern. The two communities would like to ensure the growth of business along the corridor with the industrial parks	No action needed

	while balancing potential improvements that are necessary for safety, operations, and multi-modes of transportation.	
1.06	During discussion, outline of upcoming public outreach efforts was discussed. The action items include: • Presentation • Survey • Draft report • Flyer with outreach effort • Flyer with accident summary. Upcoming Video conference link: https://meetings.ringcentral.com/j/1493919426	No action needed

The foregoing constitutes BL Companies understanding of matters discussed, issues to be addressed, and parties responsible for said issues and conclusions reached. Should any attendees disagree with the content or items indicated above, please advise, in writing, no more than three (3) calendar days following the date of this record of the meeting.

Prepared by:

P. Padlo

Pat Padlo PE, PTOE

Submitted by:

Michael Dion PE, PTOE

Approved by:

Rich Donovan

Rich Donovan

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JOB MEETING MINUTES

PROJECT NUMBER:	**1901992**	**MEETING NO.**	**3**
PROJECT NAME:	**CT Route 229 Corridor Study**		
DATE OF MEETING:	04/13/2022	**DATE OF ISSUE:**	05/17/2022

CLIENT:	**NVCOG**
NAME:	**Mark Nielsen**
ADDRESS:	49 Leavenworth Street, 3rd Floor
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PHONE NUMBER:	203-489-0367

Project Team:

NAME	TITLE	FIRM OR AGENCY	PHONE	EMAIL
Josh LeCar	Assistant Director of Planning	NVCOG		
Richard Donovan	Transportation Planner	NVCOG		
Cara Radzins	Transportation Deputy	CRCOG		
Justin Malley	DECD	City of Bristol		
David Nourse	Assistant Town Engineer	Town of Southington		
Nancy Levesque	City Engineer / Public Works	City of Bristol		
Andrew Armstrong	Assistant City Planner & Development Coordinator	City of Bristol		
Bill Palmieri	Deputy Chief of Police	Town of Southington		
Patrick Zapatka	Transportation Planner II	CTDOT		
Patrick Onwuazor	Transportation Engineer	CTDOT		
Michael Disla-Suarez		CTODT		
Fred Kulakowski	Transportation Supervising Engineer	CTDOT		
Kevin Ellis	Transportation Engineer	NVCOG		

Mike Dion	Project Manager	BLC
Mike Kurker	Senior Engineer	BLC
Pat Padlo	Project Manager	BLC
Guest 1	Two individuals joined via phone	
Guest 2		

DISTRIBUTION TO ALL ATTENDEES AND THE FOLLOWING:

ITEM NO.	DESCRIPTION	ACTION BY
1.01	General introduction of call participants and project team.	No action needed
1.02	BL Companies proceeded with providing a 30-35 min presentation with an overview of existing conditions and future conditions analysis and proposed recommendations. Few of the highlights included: - Multimodal solutions for the corridor included: continuous sidewalk on the left and multi-trail on the right of Rt 229, additional crosswalks, H ramps, and pedestrian push buttons for signalize intersections. - School zone delineation and slowing down vehicles in the northern section. - Proposed enhancement of existing bus transit routes and 3 phase new bus routes along the 229 corridor. - 13 focus areas and proposed designs were presented - Southbound through second lane proposed between ESPN and Executive Boulevard North.	No action needed
1.03	Transit route expansion was discussed in more depth: how the paths were developed and what are the next steps to have any of the proposed transit routes / phases implemented.	No action needed
1.04	When presenting various sections of multi-use path, a discussion ensued about right of way (ROW); how detailed consideration were given to ROW limits and encroachments into private property.	No action needed
1.06	During discussion, outline of upcoming public outreach efforts was discussed. The action items include: • Presentation • Draft Final Report Upcoming Video conference link: https://webinar.ringcentral.com/j/1455456214	No action needed

The foregoing constitutes BL Companies understanding of matters discussed, issues to be addressed, and parties responsible for said issues and conclusions reached. Should any attendees disagree with the content or items indicated above, please advise, in writing, no more than three (3) calendar days following the date of this record of the meeting.

Prepared by:

P. Padlo

Pat Padlo PE, PTOE

Submitted by:

Michael Dion PE, PTOE

Approved by:

Rich Donovan

Rich Donovan

Appendix H Public Survey

Public Survey

A public survey was conducted in order to determine public interest in the areas of safety, congestion, and mobility of vehicles, transit system, pedestrians, and bicyclists. The following report outlines the findings of the CT Route 229 Corridor Study Survey.

Survey Questions

As of November 15, 2021, there were 20 responses. The survey data is presented as an overview, which shows responses to the survey questions from all respondents. The survey also included questions about respondents' use of the corridor, including their purpose and frequency. The final section of the report contains a summary of responses to all questions. The survey included seventeen (17) questions consisting of three (3) "Select One" questions, and fifteen (15) "Select all that apply" questions, and four (4) "Optional" demographics questions.

The survey was distributed via two methods: online and by traditional paper copy that was distributed at the following key locations:

- Public outreach venue on September 29, 2021;
- Bristol Public Library;
- Southington Public Library; and,
- The Town Planner's Office

In addition to paper surveys, posters with a link to the survey were distributed at:

- Bristol Public Library;
- Southington Public Library; and,
- The project website

Overview of Responses

Live and Use Survey Questions

The survey included four questions (Questions 1,2,4, and 7) about where respondents live, how often they use CT Route 229, and why they use CT Route 229. The greatest number of respondents indicated that they lived in Bristol, followed by Southington as shown in **Figure 1**. Of these respondents, 35% worked in Bristol, followed by "Other" (outside of the corridor) with the same percentage of 35, and with 20% working in the town of Southington as shown in **Figure 2**.

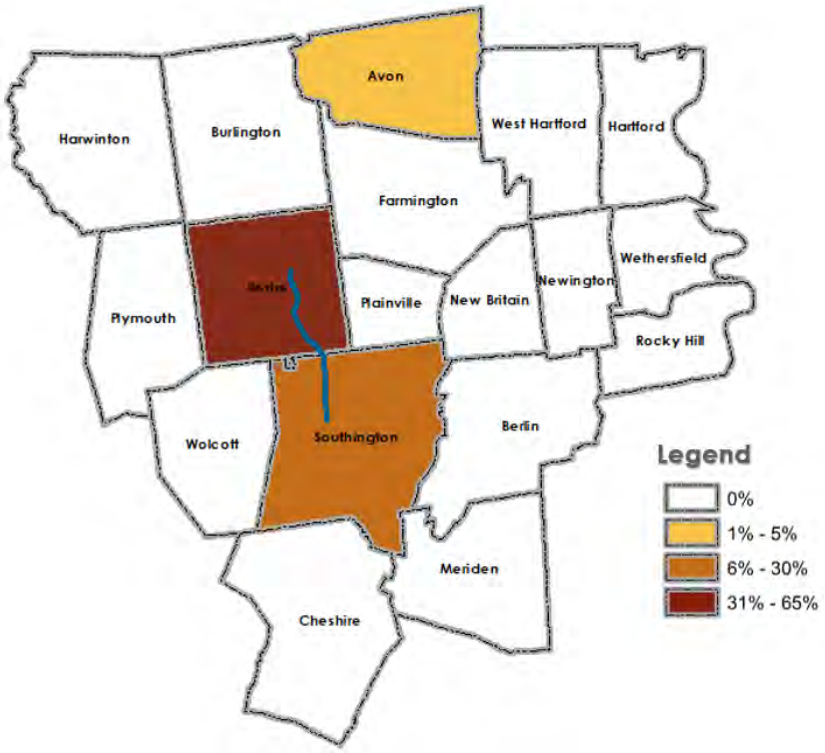


Figure 1: In which town/city do you live? (Select one)

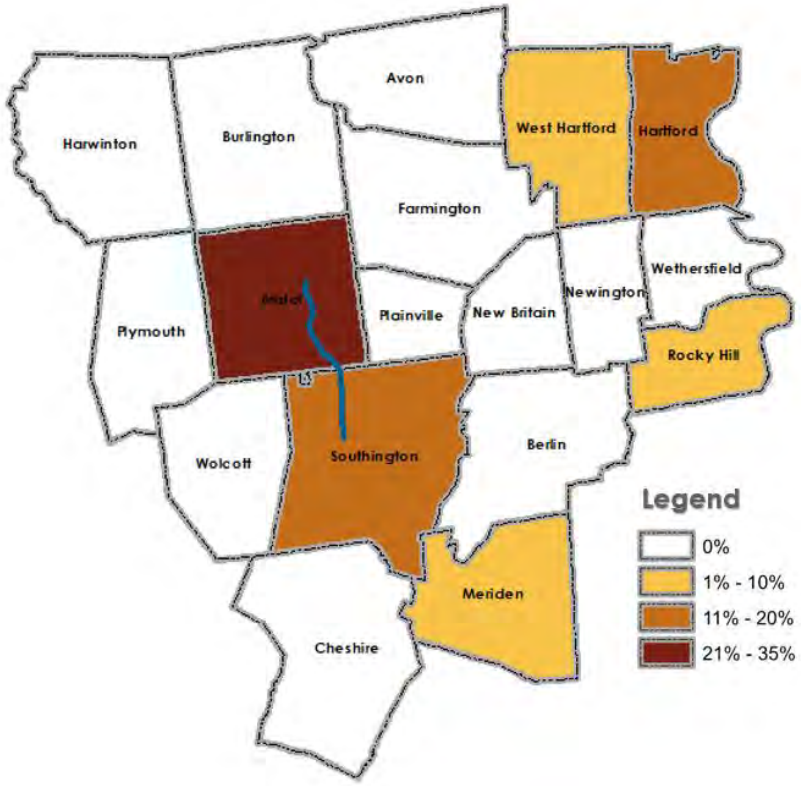


Figure 2: In which town/city do you work?

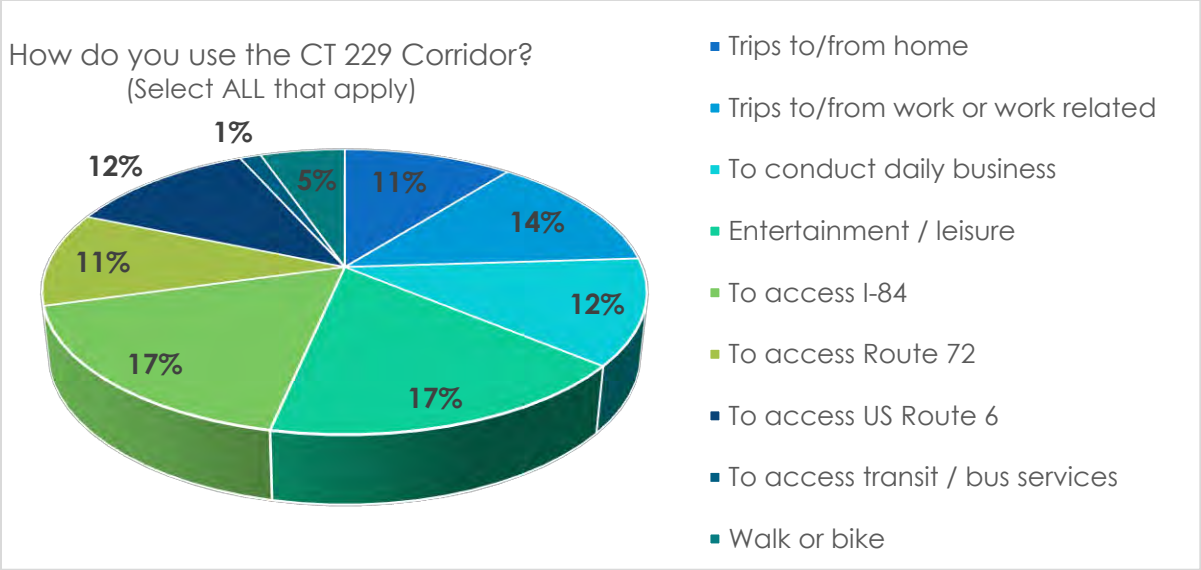


Figure 3: **How do you use the CT 229 Corridor?**

The majority of respondents use CT Route 229 to conduct daily business such as entertainment / leisure (shopping, banking, etc.) followed by commuting to and from work and accessing the two-state routes, Route 72 and US Route 6. The next highest number of responses were to visit friends and then to bypass highway traffic. A lesser amount of respondents use CT Route 229 to access transit and to bike and walk along the corridor. shown in **Figure 3**.

The majority of all respondents use CT Route 229 as drivers, only a few respondents have utilized the corridor via bicycle or walked it as a pedestrian. When driving, 30% drive more frequently than 5 times a week, 25% drive 3-4 days a week, 25% drive 1-2 days a week, while the remainder utilizes the corridor 1-3 days per month. 65% of respondents never walked along the corridor, while 70% of respondents never cycled on the roadway, shoulder, or sidewalk. **Table 1** illustrates the frequencies.

Table 1: How frequently do you use CT Route 229? (Select ALL that apply)

	5+ days / week	3-4 days / week	1-2 days / week	1-3 days / month	Never
Drive	30%	25%	25%	20%	5%
Walk	5%	10%	0%	20%	65%
Bike	5%	0%	10%	15%	70%

Respondents were asked which segment of Route 229 needs the most improvement and the Southern segment was selected with the highest request of 60%, followed by Central with 40%, and Northern with 30% as illustrated in *Figure 3*. The figure also illustrates whom the corridor should primarily serve. The northern segment with 45% is assumed to serve the locals: residents, businesses, and destinations along the segment

and on adjacent streets. The southern segment was identified to serve primarily through traffic and destinations outside of the study area (Downtown Bristol, Plantsville, I-84). The central segment has been identified to equally serve local and through traffic.

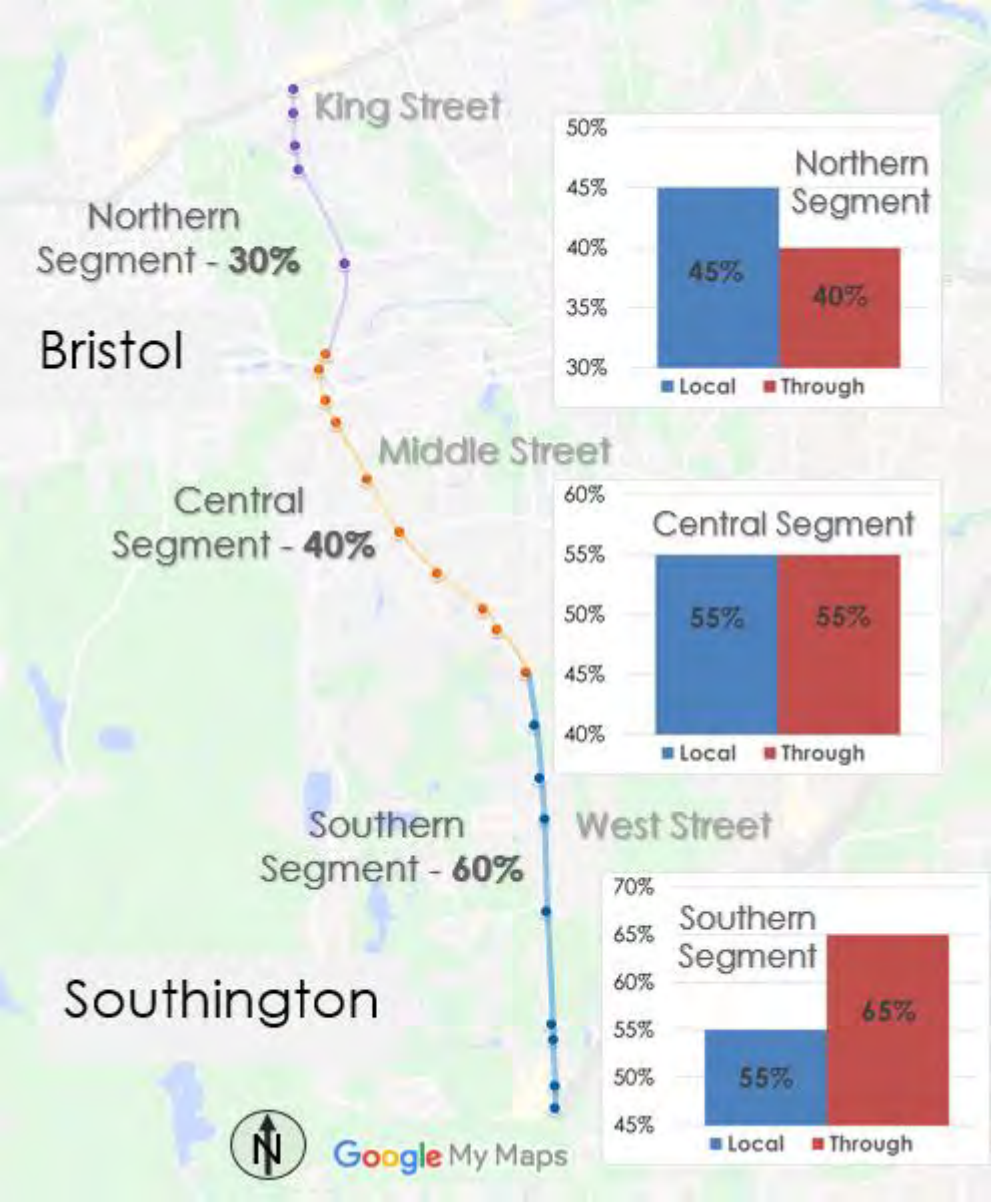


Figure 4: **Improvements by segment and primarily serve**

Table 2 further breaks down the concerns the public has with the CT Route 229 segments. The West Street segment, for example, lacks left-turn lanes and/or insufficient length, as well as traffic signals and could be better coordinated. King Street (Northern) segment and Middle Street (Central) segment amenities are of equal concern. Lack of sidewalks, crosswalks, and transit amenities are just as equally important as traffic signal coordination.

Traffic congestion and delays caused by heavy volumes scored only 30-35% across all three segments. Bicycle accommodations are important for the West Street (Southern) segment with 50% concern, while for King Street (Northern) segment and Middle Street (Central) segment only 20-25% of respondents thought it's of concern.

Table 2: Which issues are of greatest concern to you? (Select ALL that apply)

Which issues are of greatest concern to you among the three segments?	King Street	Middle Street	West Street
Lack of sufficient left turn lanes and/or insufficient length	45%	55%	90%
Lack of sidewalks and crosswalks	40%	50%	35%
Lack of sufficient public transit options	50%	45%	40%
Excessive driveways and intersections	35%	50%	55%
Traffic congestion and delays	30%	30%	35%
Vehicle speeds and speed limits	30%	40%	40%
Lack of sufficient bicycle accommodations	25%	20%	50%
Traffic signal coordination	50%	60%	75%

When comparing the concerns to the type of improvements the respondents would like to see, better bicycle accommodations were different. While bicycle accommodations were at 20-25 percent concern when looking at it from an improvements perspective, 55-60% of respondents wanted better bicycle accommodations. For pedestrian accommodations, West Street (Southern) segment and Middle Street (Central) segment with 75% and 65%, respectively, were identified for improvements. Vehicle congestion and additional public transit services were not as important with 30-35% selected by respondents.

Table 3: What type of improvements would you like to see in the CT Route 229 Corridor? (Select ALL that apply)

What type of improvements would you like to see in the CT Route 229 Corridor?	King Street	Middle Street	West Street
Better pedestrian accommodations	45%	60%	75%
Better traffic safety	40%	55%	50%
Better bicycle accommodations	55%	60%	55%
Less congestion	30%	40%	35%
Better public transit	35%	35%	35%

Additional questions were asked about what would make the residents feel more comfortable walking or biking along the segments of the corridor. **Table 4** and

Table 5 illustrate wider sidewalks and off-street bike paths or multi-use trails are a high priority. Also important is the continuity and connectivity of the facilities.

Table 4: Which of the following would make you feel more comfortable walking along the various segments of Route 229? (Select ALL that apply)

Which of the following would make you feel more comfortable walking along the various segments of Route 229?	King Street	Middle Street	West Street
Wider Sidewalks	45%	55%	45%
Better sidewalk lighting	20%	40%	30%
Improved continuity and connectivity of sidewalks	40%	45%	50%
Better compliance with the Americans With Disabilities Act (ADA) design standards	25%	30%	25%
Shorter crosswalks	10%	25%	20%
More frequent crosswalks	25%	45%	35%

Table 5: Which of the following would make you feel more comfortable riding a bike along the various segments of Route 229? (Select ALL that apply)

Which of the following would make you feel more comfortable riding a bike along the various segments of Route 229?	King Street	Middle Street	West Street
On-street bike lane with proper markings and signage	20%	30%	30%
Pavement symbols indicating to drivers to share the road with cyclists	25%	30%	25%
On-street bike lane separated with buffer or raised median	25%	30%	25%
Off-street bike path or multi-use trail	60%	65%	65%
Adjusting traffic signals to recognize cyclists	35%	40%	30%
Addition of racks to secure bikes at more destinations	40%	40%	40%

Vision

The survey included questions about the vision for the CT Route 229 corridor in terms of the overall ideal vision, land use, and travel concerns (Questions 12-17). The majority of respondents indicated that they felt the corridor should have a mix of uses including restaurants, lodging, visitor-oriented shopping complementary of existing development, industrial and manufacturing, residential, recreational, retail, medical centers, and educational facilities. Across all three segments, mobility and safety for all modes was very important to ensure it would efficiently serve pedestrian, cyclists, motorists, and transit riders. Overall, all respondents would like to see the corridor to continue to grow and existing open farmland to be developed as part of the corridor vision.

Table 6: Picture your ideal vision for CT Route 229, which of the segments would you describe as being well suited for each of the following scenarios? (Select ALL that apply)

Picture your ideal vision for CT Route 229 , which of the segments would you describe as being well suited for each of the following scenarios?	King Street	Middle Street	West Street	Not Applicable
A corridor where traffic can move efficiently and safely with accommodations for bike, pedestrians, and transit riders	70%	70%	75%	5%
A bustling commercial hub with increased retail opportunities	30%	45%	50%	25%
A corridor lined with restaurants, lodging, visitor-oriented shopping complementary of existing development	30%	70%	70%	15%
A charming New England town with retail services concentrated in a "village center"	20%	15%	30%	45%
Primarily a residential community with interspersed farmland	15%	5%	25%	60%
A corridor with a mix of uses including: industrial and manufacturing, residential, recreational, retail, medical centers, and educational facilities.	35%	70%	65%	10%

Demographics

Questions 18 through 21 asked respondents for optional demographic information. Not all participants have provided the information; however, the survey indicated 55% were male respondents, 30% were female, and 15% did not provide an answer. 80% of respondents identified themselves as white/Caucasian, 5% as Hispanic/Latinx, and 15% did not provide an answer. Half of the respondents' households make $100,000 and over, 30% make less than $100,000, and 20% did not provide an answer.

Summary

The CT Route 229 Corridor Study Survey generated 20 responses. The responses indicate that the majority live in the city of Bristol or the town of Southington and use the corridor 4 days a week or more frequently. Their primary mode of travel is driving to conduct daily business, leisure in the area, commute to and from work, and access the local networks.

When it comes to the preferred vision of the corridor, the corridor should serve both local residents/local businesses and through traffic equally across all three segments. For the corridor improvements, better pedestrian and bicycle accommodations along with safety improvements scored 40%-75%. The respondents showed a diverse range of concerns regarding the corridor including traffic congestion and safety of the corridor. For the purpose of this report, statements regarding intersections and traffic signalization were included under traffic congestion. Responses were concerned with congestion at intersections; the lack of ability to make a left turn in a timely manner or from exclusive turn lane; running through intersections to avoid red lights; ignoring 'No Turn on Red' signs at several side roads, and enforcement of traffic law.

On the land use side, some respondents felt the corridor would benefit from streetscape designs and to ensure continued growth with mixed-uses, while providing commercial, residential and industrial developments. A fair amount of respondents felt the corridor would benefit from the redesign of CT Route 229 to create a more pedestrian/bicyclist friendly corridor while a number of respondents felt that re-signalization and optimization throughout the corridor (11%) is just as important.

APPENDIX

Appendix A Printed Survey

Demographics (Optional)

The following questions are all OPTIONAL. They have been included to help the NVCOG meet federal rules requiring it to document agency wide efforts to reach minority communities.

18. What gender do you identify as?

- ☐ Male ☐ Female ☐ Non-binary ☐ I do not wish to share
- ☐ Other (Please specify) _____

19. What is your primary language spoken at home?

- ☐ English ☐ Spanish ☐ Polish ☐ Portuguese ☐ I do not wish to share
- ☐ Other (Please specify) _____

20. How would you describe yourself?

- ☐ White or Caucasian
- ☐ Hispanic or Latinx
- ☐ American Indian or Alaska Native
- ☐ Multi Racial
- ☐ Other (Please specify) _____
- ☐ Black or African American
- ☐ Asian or Asian American
- ☐ Native Hawaiian or other Pacific Islander
- ☐ I do not wish to share

21. What is your household income?

- ☐ Under $15,000
- ☐ Between $15,000 and $29,999
- ☐ Between $30,000 and $49,999
- ☐ I do not wish to share
- ☐ Between $50,000 and $74,999
- ☐ Between $75,000 and $99,999
- ☐ Over $150,000

Thank you for participating in our survey. This survey is anonymous and we appreciate your feedback!

NAUGATUCK VALLEY COUNCIL of GOVERNMENTS

For more information on this study, to send additional comments,

and sign up for project updates, please visit:

https://nvcogct.gov/project/current-projects/transportation-planning-studies/bristol-route-229-corridor-study/

ROUTE 229 CORRIDOR STUDY

Public Involvement Survey SEPTEMBER 2021

NVCOG invites you to take part in this brief 5 minute survey to share your thoughts and concerns about Connecticut Route 229. In conjunction with the City of Bristol, the Town of Southington, CRCOG, CTDOT, and BL Companies as the consultant for this project, we are seeking feedback as we begin to imagine the future of this corridor.

NVCOG

The study area stretches from US Route 6 in Bristol to I-84 in Southington and has three main segments: King Street, Middle Street, and West Street. The following map identifies these three segments, which will be referenced in the survey.

Please return completed surveys to comment boxes located at the Bristol Town Hall and Southington Town Hall, or complete the on-line version at **HTTPS://www.surveymonkey.com/r/ct229study**

For more information on this study, to send additional comments, and sign up for project updates, please visit:

https://nvcogct.gov/project/current-projects/transportation-planning-studies/bristol-route-229-corridor-study/

Thank you for participating in our survey. This survey is anonymous and we appreciate your feedback!

1. In which town/city do you live?

- ☐ Bristol
- ☐ Southington
- ☐ Other (Please Specify) _____

2. In which town/city do you work?

- ☐ Bristol
- ☐ Southington
- ☐ Not Applicable
- ☐ Other (Please Specify) _____

3. In your opinion, which segment of Route 229 needs the most improvements? (Select ALL that apply)

- ☐ King Street
- ☐ West Street
- ☐ Middle Street
- ☐ No Opinion

4. How do you use Route 229? (Select ALL that apply)

- ☐ Trips to / from work
- ☐ Trips to / from school
- ☐ Trips to / from home
- ☐ To access transit / bus services
- ☐ To access I-84
- ☐ Walk or Bike (recreational)
- ☐ To conduct daily business (shopping, banking, etc.)
- ☐ Entertainment / leisure (visit friends and/or family, access restaurants, etc.)
- ☐ To access US Route 6 / Farmington Ave.
- ☐ To access Route 72
- ☐ Other (Please specify) _____

5. Whom should this corridor primarily serve? (Select ALL that apply)

	King Street	Middle Street	West Street	No Opinion
Through traffic and destinations outside of the study area (Downtown Bristol, Plantsville, I-84...)	☐	☐	☐	☐
Local residents, local business, and destinations along the corridor and on adjacent streets	☐	☐	☐	☐

6. Which issues are of greatest concern to you among the three segments? (Select ALL that apply)

	King Street	Middle Street	West Street	No Opinion
Lack of sufficient left turn lanes and/or insufficient length	☐	☐	☐	☐
Lack of sidewalks and crosswalks	☐	☐	☐	☐
Lack of sufficient public transit options	☐	☐	☐	☐
Excessive driveways and intersections	☐	☐	☐	☐
Traffic congestion and delays	☐	☐	☐	☐
Vehicle speeds and speed limits	☐	☐	☐	☐
Lack of sufficient bicycle accommodations	☐	☐	☐	☐
Traffic signal coordination	☐	☐	☐	☐

7. How often do you: (Select ALL that apply)

	5+ days / week	3-4 days / week	1-2 days / week	1-3 days / month	Never
Currently DRIVE on Route 229	☐	☐	☐	☐	☐
Currently WALK on Route 229	☐	☐	☐	☐	☐
Currently BIKE on Route 229	☐	☐	☐	☐	☐

8. Which of the following would make you feel more comfortable walking along the various segments of Route 229? (Select ALL that apply)

	King Street	Middle Street	West Street	No Opinion
Wider Sidewalks	☐	☐	☐	☐
Better sidewalk lighting	☐	☐	☐	☐
Improved continuity and connectivity of sidewalks	☐	☐	☐	☐
Better compliance with the Americans With Disabilities Act (ADA) design standards	☐	☐	☐	☐
Shorter crosswalks	☐	☐	☐	☐
More frequent crosswalks	☐	☐	☐	☐

9. Which of the following would make you feel more comfortable riding a bike along the various segments of Route 229? (Select ALL that apply)

	King Street	Middle Street	West Street	No Opinion
On-street bike lane with proper markings and signage	☐	☐	☐	☐
Pavement symbols indicating to drivers to share the road with cyclists	☐	☐	☐	☐
On-street bike lane separated with buffer or raised median	☐	☐	☐	☐
Off-street bike path or multi-use trail	☐	☐	☐	☐
Adjusting traffic signals to recognize cyclists	☐	☐	☐	☐
Addition of racks to secure bikes at more destinations	☐	☐	☐	☐

10. If there were regular bus service along the corridor with stops near popular destinations, I would use transit along Route 229:

☐ 5+ days / week ☐ 1-2 days / week ☐ 3-4 days / week ☐ 1-2 days / month ☐ never

11. What type of improvements would you like to see in the CT Route 229 Corridor? (Select ALL that apply)

	King Street	Middle Street	West Street	No Opinion
Better pedestrian accommodations	☐	☐	☐	☐
Better traffic safety (I currently feel unsafe driving parts of this segment)	☐	☐	☐	☐
Better bicycle accommodations	☐	☐	☐	☐
Less congestion	☐	☐	☐	☐
Better public transit	☐	☐	☐	☐

Corridor Vision

(12-17) Picture your ideal vision for CT Route 229 , which of the segments would you describe as being well suited for each of the following scenarios? (Select ALL that apply)

	King Street	Middle Street	West Street	Not Applicable
A corridor where traffic can move efficiently and safely with accommodations for bike, pedestrians, and transit riders	☐	☐	☐	☐
A bustling commercial hub with increased retail opportunities	☐	☐	☐	☐
A corridor lined with restaurants, lodging, visitor-oriented shopping complementary of existing development	☐	☐	☐	☐
A charming New England town with retail services concentrated in a "village center"	☐	☐	☐	☐
Primarily a residential community with interspersed farmland	☐	☐	☐	☐
A corridor with a mix of uses including: industrial and manufacturing, residential, recreational, retail, medical centers, and educational facilities.	☐	☐	☐	☐

Appendix B Survey Poster

NAUGATUCK VALLEY COUNCIL of GOVERNMENTS

Join us on September 29 / 6PM-8PM

IN PERSON:

Bristol Public Library

Meeting Room 2 & 3

5 High Street, Bristol, CT

*** Masks are required to be worn at the facilities ***

ON LINE:

https://webinar.ringcentral.com/j/1448241259

Click HERE for More Information

PROJECT SURVEY:

Follow Link or QR Code:

https://www.surveymonkey.com/r/ct229study

A language or sign translator can be requested five days in advance of the meeting.
Un traductor de idiomas puede ser solicitado al menos cinco días previos a una reunión.
Tłumacza języka lub języka migowego można poprosić pięć dni przed spotkaniem.

This program is sponsored by NVCOG, City of Bristol, Town of Southington, and CTDOT.

Appendix C Survey Infographic

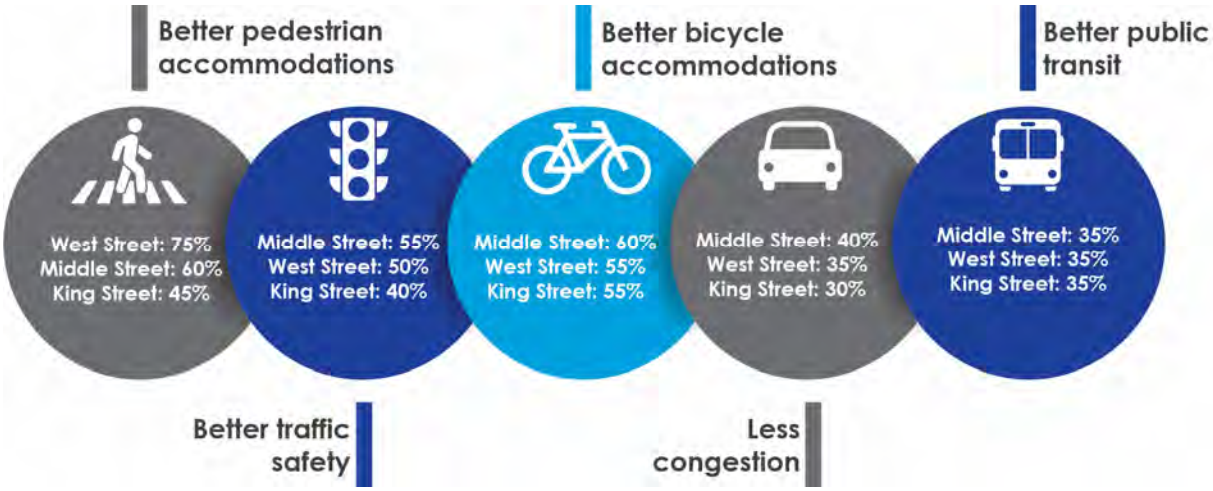
ROUTE 229 CORRIDOR STUDY

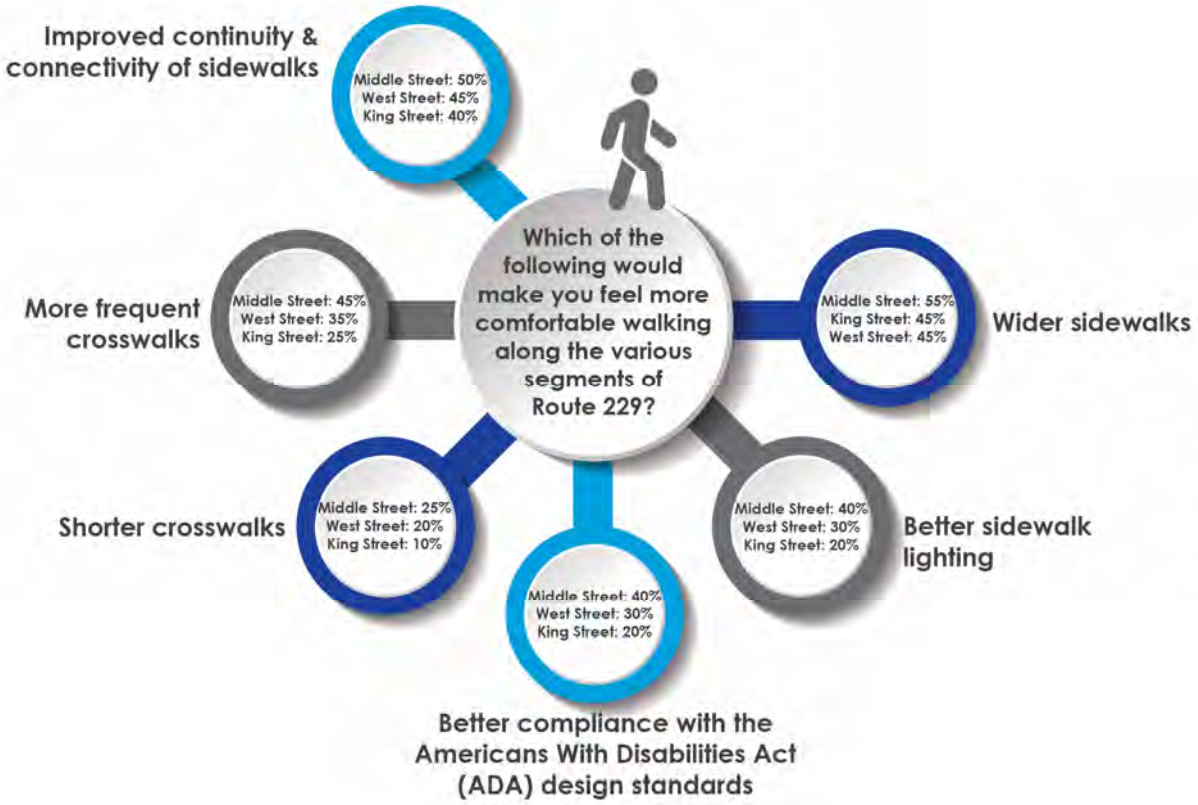
Public Involvement Survey SEPTEMBER 2021

NVCOG

Which segment of Route 229 needs the most improvements?

What type of improvements would you like to see in the CT Route 229 Corridor?





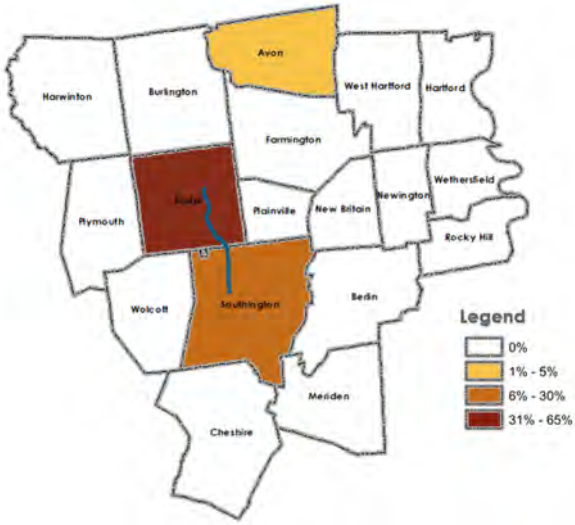
Appendix D Summary of Survey Results

ROUTE 229 CORRIDOR STUDY

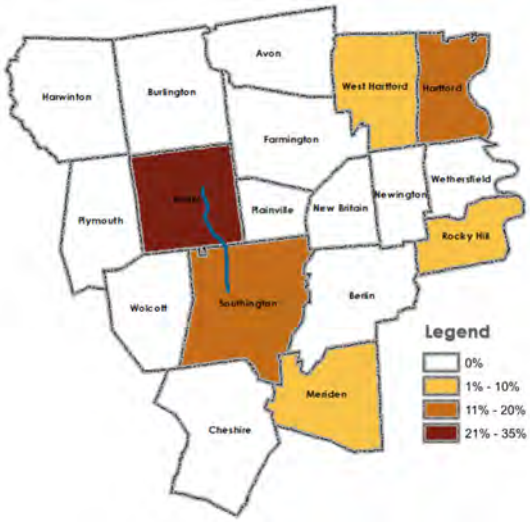
NVCOG

Public Involvement Survey

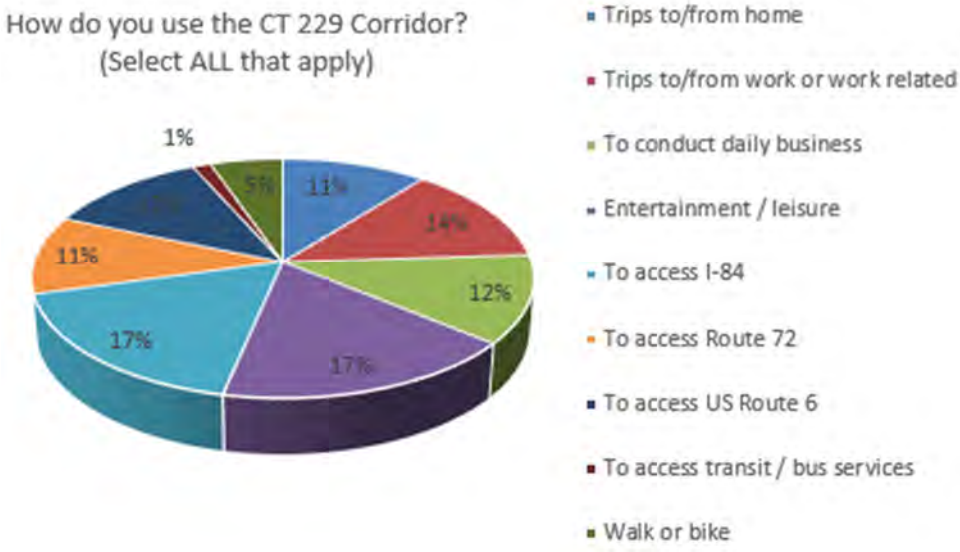
1. In which town/city do you live?



2. In which town/city do you work?



3. How do you use Route 229? (Select ALL that apply)



4. In your opinion, which segment of Route 229 needs the most improvements? (Select ALL that apply)

	King Street	Middle Street	West Street
In your opinion, which segment of Route 229 needs the most improvements? (Select ALL that apply)	30%	40%	60%

5. Whom should this corridor primarily serve? (Select ALL that apply)

	King Street	Middle Street	West Street
Through traffic and destinations outside of the study area (Downtown Bristol, Plantsville, I-84...)	45%	55%	55%
Local residents, local business, and destinations along the corridor and on adjacent streets	40%	55%	65%

6. Which issues are of greatest concern to you among the three segments? (Select ALL that apply)

	King Street	Middle Street	West Street
Lack of sufficient left turn lanes and/or insufficient length	45%	55%	90%
Lack of sidewalks and crosswalks	40%	50%	35%
Lack of sufficient public transit options	50%	45%	40%
Excessive driveways and intersections	35%	50%	55%
Traffic congestion and delays	30%	30%	35%
Vehicle speeds and speed limits	30%	40%	40%
Lack of sufficient bicycle accommodations	25%	20%	50%
Traffic signal coordination	50%	60%	75%

7. How often do you: (Select ALL that apply)

	5+ days / week	3-4 days / week	1-2 days / week	1-3 days / month	Never
Currently DRIVE on Route 229	30%	25%	25%	20%	5%
Currently WALK on Route 229	5%	10%	0%	20%	65%
Currently BIKE on Route 229	5%	0%	10%	15%	70%

8. Which of the following would make you feel more comfortable walking along the various segments of Route 229? (Select ALL that apply)

	King Street	Middle Street	West Street
Wider Sidewalks	45%	55%	45%
Better sidewalk lighting	20%	40%	30%
Improved continuity and connectivity of sidewalks	40%	45%	50%
Better compliance with the Americans With Disabilities Act (ADA) design standards	25%	30%	25%
Shorter crosswalks	10%	25%	20%
More frequent crosswalks	25%	45%	35%

9. Which of the following would make you feel more comfortable riding a bike along the various segments of Route 229? (Select ALL that apply)

	King Street	Middle Street	West Street
On-street bike lane with proper markings and signage	20%	30%	30%
Pavement symbols indicating to drivers to share the road with cyclists	25%	30%	25%
On-street bike lane separated with buffer or raised median	25%	30%	25%
Off-street bike path or multi-use trail	60%	65%	65%
Adjusting traffic signals to recognize cyclists	35%	40%	30%
Addition of racks to secure bikes at more destinations	40%	40%	40%

11. What type of improvements would you like to see in the CT Route 229 Corridor? (Select ALL that apply)

	King Street	Middle Street	West Street
Better pedestrian accommodations	45%	60%	75%
Better traffic safety (I currently feel unsafe driving parts of this segment)	40%	55%	50%
Better bicycle accommodations	55%	60%	55%
Less congestion	30%	40%	35%
Better public transit	35%	35%	35%

(12-17) Picture your ideal vision for CT Route 229 , which of the segments would you describe as being well suited for each of the following scenarios? (Select ALL that apply)

	King Street	Middle Street	West Street	Not Applicable
A corridor where traffic can move efficiently and safely with accommodations for bike, pedestrians, and transit riders	70%	70%	75%	5%
A bustling commercial hub with increased retail opportunities	30%	45%	50%	25%
A corridor lined with restaurants, lodging, visitor-oriented shopping complementary of existing development	30%	70%	70%	15%
A charming New England town with retail services concentrated in a "village center"	20%	15%	30%	45%
Primarily a residential community with interspersed farmland	15%	5%	25%	60%
A corridor with a mix of uses including: industrial and manufacturing, residential, recreational, retail, medical centers, and educational facilities.	35%	70%	65%	10%

Appendix I Real Estate Market Analysis

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Executive Summary[1]

Summary Goals and Objectives

The objectives were to perform an economic and real estate market analysis to understand the market support for potential development along the Route 229 corridor.

The market analysis includes an assessment of the potential for multi-family rental residential, live/work units and owned retail commercial space with attention to the demand for retail space including retail as part of a mixed-use development scenario. The analysis also analyzed support for commercial and office space and finally Industrial/flex and mixed related uses including logistics.

Once market supportable uses have been determined and a draft development plan for the corridor has been proposed, a limited economic impact analysis will be performed to assess the positive economic impact of a proposed development scenario.

Summary Scope and Approach

A top-down approach was utilized that began with an analysis of economics affecting real estate development followed by demographics support for real estate and finally an analysis of particular categories of properties including multi-family, industrial, office and retail.

The first major task was the market analysis itself. Following the analysis and public meetings, a short list of sites for redevelopment was prepared along with potential high level development programs. The potential programs will be arrayed in our proprietary matrix to weigh and analyze potential redevelopment programs to estimate their likelihood of being implemented and the ability to meet many of the criteria for development set forth by the team and iterated by the public and stakeholders.

Economics Affecting Real Estate

National trends affecting local real estate: Pre-COVID-19, the US economy was very strong and unemployment very low as reflected in the consistent positive GDP results from 2017 to late 2019. Unemployment rates for 2019 were 3.5%, the lowest since 1967. COVID-19 sparked massive government instituted closedowns of many business sectors and the unemployment rate was almost 14% in early 2020 as the pandemic set into almost a year of

[1] NOTE: The executive summary is a summary of the entire report and may be removed and used separately but it not expected to provide the detail of the full body of the report herein.

shutdowns followed by easing of restrictions and closedowns again. Given the volatility of the pandemic, it became difficult for economists to predict when the US economy would actually recover. As of June 2021, economists predict a return to the pre-COVID-19 economy early to mid-2022 before the US is back to anything similar to pre-COVID-19 economics, depending on vaccination rates and return to work scenarios. Current economic growth rates are 9% which is on track with forecasts.

The national, state and local residential markets have seen a change in major trends during and post COVID-19 period. There has been significant flight from the large urban centers which continues to fuel suburban real estate development. However, shortage of funds from lenders, as well as supply and material shortages, may choke the ability to move forward to meet the demand for new real estate development, especially single and multi-family development.

Increase in costs of construction materials and fuel are forecasted to cause price increases and potentially even inflation, which may impact the economic rebound as well. While in April 2021 regular Federal Open Markets Committee meeting, the Federal Reserve held interest rates near zero, the private sector increased lending rates over inflation fears. Consumer credit (unsecured credit) rates are up the highest since 2016. Reluctance to spend will slow down retail real estate recovery nationally and in local retail markets as well. All in all, it is a very fluid situation. However, rising consumer confidence and a third round of government checks to families are anticipated to fuel retail spending.

Regionally, Connecticut appears to be in a better economic position than most US states in terms of returning to Pre-COVID-19 business levels primarily to its early response to the pandemic and fast rollout of the vaccine which has allowed for reopening sooner than other states.

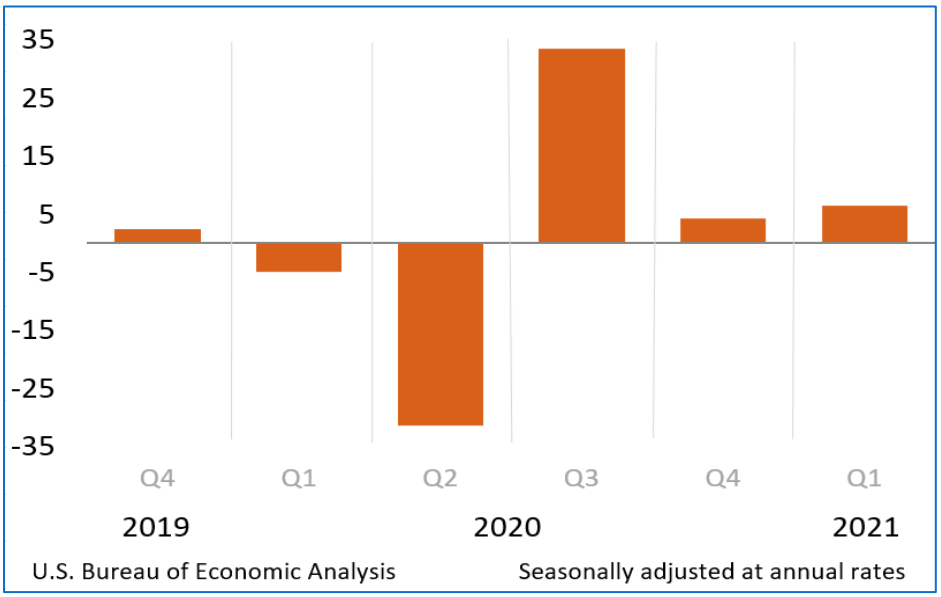


Figure 1 Real GDP: Percent Change from Preceding Quarter

According to the Connecticut Economic Digest of June 2021, the impact of COVID-19 was greatly felt by the State in 2020, as with the rest of the country. Most state exports were in decline, except for pharmaceutical products which increased by 138%. Border closures affected historically strong exports.

The pandemic also had devastating impact on travel and tourism which is considered as export product. Tourism is one of the fastest growing Connecticut industries and this affects not only visitation but food service, hotel stays, cultural venues and more. Until the pandemic hit, the average annual tourism spending growth rate was at 5.5% fixed by 2015, according to ctvisit.us. The long-term outcome of these effects are still unclear at this time. However, it is expected that with higher than average vaccination rates, that tourism will increase. This is supported by a "Say Yes to CT" summer tourism campaign. Tourism directly impacts real estate including retail, hospitality and many events venues.

According to the bea.gov, bulletin of Q1 2021, Connecticut had a state GDP (Gross Domestic Product) growth rate at 6% with the US average at 6.4%. This trend appears to be continuing as Connecticut's rollout of the vaccine appears to be in the top five states in the US. This is allowing for an easing of restrictions ahead of other states.

In terms of local and regional economics, Southington and Bristol have some unique economic drivers that highlight their differences and potential to create real estate demand. Bristol has a fairly-skilled workforce with the most significant category being healthcare employment. Media and aerospace are also important. Bristol has a fairly diversified workforce which is attractive to media and related employers. Southington has a higher educational base and higher household income than Bristol. A larger number of workers are self-employed than in Bristol and tend not to work for large companies.

The conclusion is that the economies of the two towns are somewhat complimentary but their views on development will greatly impact the type of real estate development that will be implemented compared to what has market support.

Demographics Affecting Real Estate

Southington has higher income and educational levels than Bristol, but both are above US averages. The incomes support an average affordability for a 2-bedroom rental for $2,000 per month or higher. There is limited rental housing inventory for young college graduates or new-to-the workforce population. Existing inventory is primarily a single family residential market that may not be attractive to them. Empty nesters would also find a lack of product meeting their demand criteria.

In terms of transportation, most people drive to work and tend to have two vehicles per housing unit. Therefore, a significant increase in employment centers along the Route 229 corridor need to consider journey to work and potentially the numbers of commuters travelling along this corridor. However, post-pandemic future projections suggest a long-term shift in where people work with a significant number of workers choosing a hybrid work at home option or 100% remote work environment.

As such, the post COVID-19 workplace is expected to be different. Many workers, especially Millennials, are able to do much of their work online from home and do not want to return to work 5-days per week. This will dramatically change demand for office space as well as traffic volume and patterns. It will also increase the demand for housing since more workers are now working at home 2 to 3 days per week.

Real Estate Market

Multi-family Residential:

Overall, there is no significant new inventory in the Bristol-Southington multi-family residential market. The limited inventory of new units is creating pent-up demand for new and more up-to-date products. Vacancies are below the 5% threshold which indicates demand outpaces supply. While average existing rents seem low at $1053 overall, and well below affordability ranges, it actually indicates that most of the existing product is old. In addition, the existing old inventory of multi-family really does not take into account the migration of those that can afford to move away from the larger cities in the COVID-19 era. Big cities are seeing an exodus of residents. While 110 miles away, 300,000 alone have left New York City, and with more working at home and expected to continue for the long term, families are looking at lifestyle and quality of life factors over the convenience and vibrancy of the cities. While New York City seems like it would not impact the Bristol/Southington market area, according to CBRE and ctpost.com, Connecticut, which had been declining in population until mid-2020, is now one of the biggest beneficiaries of the big city exodus. New York City residents are relocating all over Connecticut, with the bulk in Fairfield country, but the influx has reached as far north as Washington, CT. Hartford has seen some exodus, that may positively affect both Bristol and Southington. Therefore, Bristol and Southington are ripe to take advantage of this exodus.

With low mortgage rates and city out-migration, the only things stopping developers are property and finance liquidity.

Overall, there is clearly a shortage of new multi-family inventory and demand for new units, of higher rents, and additional amenities. The current demand is a work-live-play lifestyle with on-site amenities from retail to outdoor amenities such as trails, paths, pools and indoor gyms, common workspaces and more. Average rents supportable are $2000 per month and rising.

Initial phase of new development along the Route 229 corridor would support 200 units in 2 to 3- bedroom unit sizes with attached or indoor garages. Unit types include townhouses, semi- attached townhouses and upscale multi-family apartment style units.

In addition, there is a 55-plus age restricted community demand for empty nester housing for independent active empty nesters and early retired couples. It is estimated from

demographics and the existing inventory that there is a net demand for 225 new units over the next 10 years.

Industrial, warehousing and logistics:

Nationally this market is performing very well, especially with the ever-increasing demand for online goods that has only been exacerbated by the pandemic. The I-84 corridor is not in the top US corridors but does have access to 56 million people between the axis of Boston and New York. Rents are rising, vacancies are around 5%, and modern logistics space is in demand.

Consumer spending is higher in the Northeast corridor than most US markets due to density and higher than average household incomes. The Hartford, CT net absorption for late 2020 was over 900,000 SF putting it nearly in the US Top 10 industrial markets based on absorption. Rents are just above $5 PSF.

In terms of local inventory to meet demand, the only real logistics building is on Aircraft Road in Southington that would be able to accommodate the size and type of demand that is currently in play. With 100,000 SF space in the most demand, the corridor could be taking advantage of this low inventory. The question will be the issues of zoning, traffic and neighborhood impact. If last year's regional absorption was 900,000 SF and the Route 229 corridor picked up 10% of that, it would support another 100,000 SF of space in just the next year. All in all, the logistics market is favorable. There was nothing to indicate support for manufacturing or small warehouse space.

Office Real Estate:

National office vacancy rates are currently 13.7% on average and rising, and expected to continue to rise, while absorption is a negative 22 million SF and expected to continue this negative trend. Oddly, Cushman forecasts a rental growth rate at 4.4% but that is expected to turn negative in short order. While interest rates are very low, the ever-increasing vacancy rates, lower rental rates, and negative absorption will halt the new construction shortly.

The near and mid-term is where there will be many work-at-home advancements and this work form will continue along with smaller HQ offices and a mix of more satellite offices in suburban outposts that are working within the socially distancing parameters. Even after these parameters are eased, it is expected that office space demand will be very different in the future with shared offices, 2 to 3 days per week of remote work-at-home, and an evolving and changing workplace for office workers.

The overall outlook is that the economic recovery is highly uncertain and points to the path of the pandemic. While the economy has started to perform better, the US economy will

remain a long way away from returning to pre-COVID-19 levels of full employment and when it does, much of the workforce will still be working from home. As such, no significant office space demand is projected outside of some large business attractions to the corridor that would need build-to-suit space. The most likely location would be Aircraft Road, where average rents are $11 PSF, which is on the low side and does not support new development.

As a result, no new speculative office space is supported by the market in the corridor.

Retail Real Estate:

Retail, which includes restaurant space, was probably the hardest hit during the pandemic. Based on capture estimate where retail would be tied to mix-used development, it is possible to support up to 74,000 SF of space but this must be very carefully programmed and will follow residential buildout. It is more about convenience and experience — live/work/play. Malls and community centers would not find significant support. Retail needs to be directly integrated as part of a mixed-use residential program.

Hospitality:

According to the CT Economic Digest of June 2021, statewide hotel occupancy rates were up to 50.8% from a year to date of 44%. Hotels cannot continue to stay open and operate at these occupancy levels. Typically, they need annual occupancies around 70% or better.

Visitations by air is down by 53%, which is reflective of the inability of travelers, especially foreign travelers, to visit the State except for business or exceptional family circumstances. Hotels need business travels, in all but resort locations, to maintain operations, thus a dramatic drop in business travelers has a significant negative impact on the ability to support hotels in the market, including Bristol and Southington.

Findings within the corridor indicate no additional room demand. Over the past nine years, even pre-pandemic, the best hotel occupancy levels average less than 70%. Even in peak years, the best levels were 67%, and therefore not supportable of additional rooms. Room rates, RevPAR and demand are not increasing to support additional rooms. In 2018 a new 125-room Courtyard was added in Southington. Occupancy levels and room rates immediately dropped with the introduction of this new supply. As such, the demand for rooms has not yet met the supply volume, and until rates and occupancies increase significantly, no new rooms are supportable.

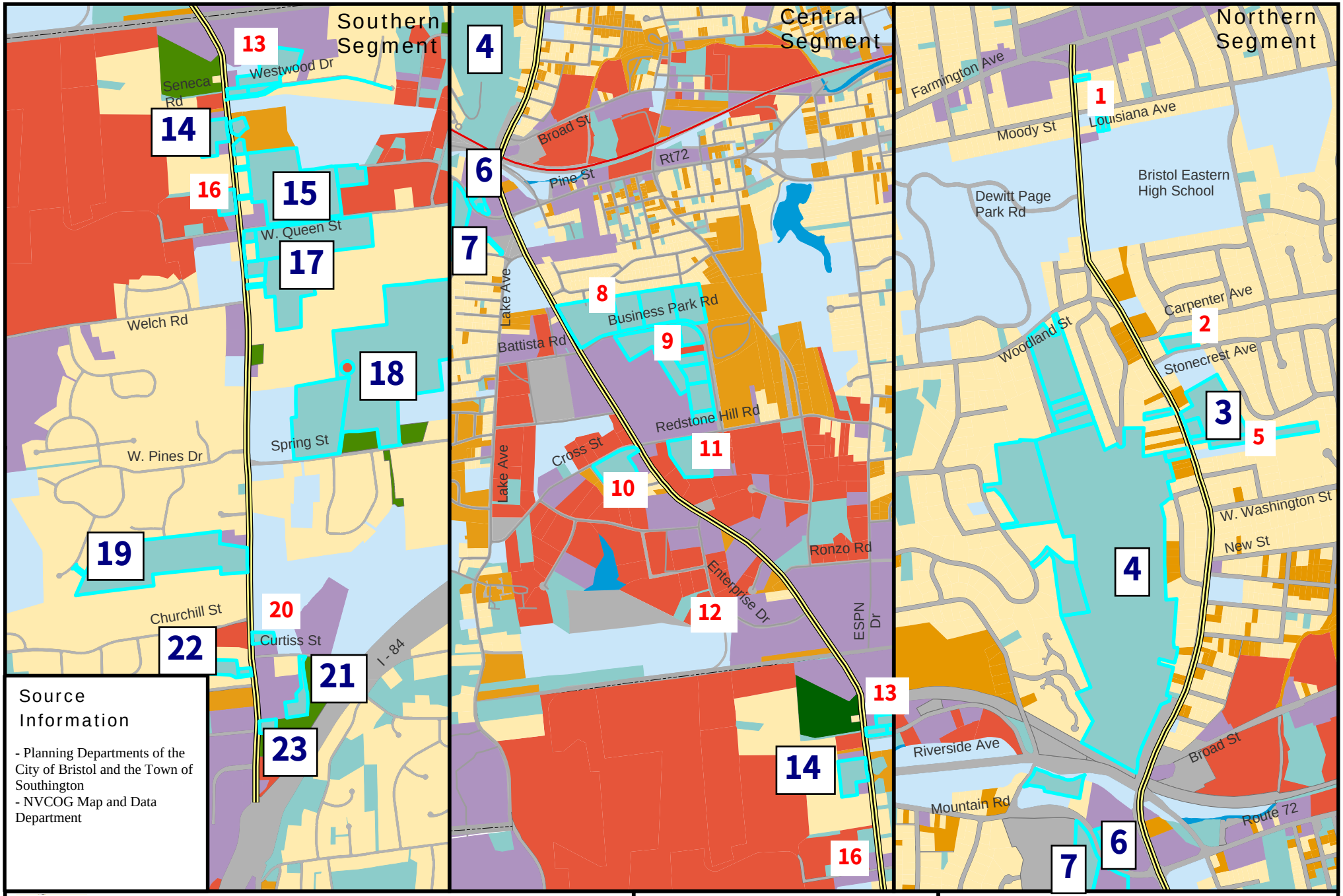
Summary Development Opportunities

Based on the identified parcels of land for future development in *Figure 2*, each site was reviewed and a short list of market supportable developments was proposed as highlighted in *Figure 2*. The first draft analysis was based on existing land use, access to transportation, buffering and estimated site sizing.

Multi-family mixed-use real estate (200 units phase 1 and 225 units of 55-Plus) and logistics industrial (100,000 in first year) would have the most market support. Retail linked to the multi-family would create a good mixed-use program up to 72,000 SF as highlighted in *Figure 2*.

Table 1: Market Supportable Conclusions Summary Table

Real Estate Type	# of units	Description	Target market
Multi-family residential	200	2 to 3 bedrooms with many modern amenities starting at $2,000/month	Millennials, young graduates and empty nesters
55 plus residential	225	with 2 car garage starting at $3,000/month	55 plus residential, similar amenities to above, could be apartments or townhouses
Industrial logistics	100,000 SF		could include advanced manufacturing or R&D must be high bay and meet today's' standards
Retail	74,000 SF	must be part of mixed use housing development	must match target market of housing development
Office	No support forecasted		
Hospitality	No support forecasted		



Source Information

- Planning Departments of the City of Bristol and the Town of Southington
- NVCOG Map and Data Department

Legend

Land Use / Zoning

- Agriculture
- Business
- Community Facility
- Industrial
- Residential Multi-family
- Residential Single-family
- Transpo_ROW
- Undeveloped
- Water
- CT Rail
- CT Roads
- Corridor
- Boundary
- XX Sites selected for market analysis

N

Figure 2

CT ROUTE 229 CORRIDOR STUDY
BRISTOL / SOUTHINGTON

BL Companies — Architecture Engineering Environmental Land Surveying

Market Analysis of Selected Sites

Table 2 illustrates proposed developments and caveats that may become a factor in development process.

Table 2: Selected Parcels of Land for Future Development

Site #	Location Segment	General Address	Notes & comments:	Market Supportable Use	Use Caveat
3	Northern Segment	335 King Street	South of Sheridan Woods Health Care Center	Mixed-use Multi-family residential (could include 55 plus)	Good access but site size restricted
4	Northern Segment	Brewster Road / Woodland Street	To the east of 364 King St Block Lot: 47-5-1/ Parcel	Mixed-use multi-family residential (could include 55 plus)	Site appears to be large enough for a community type development
6	Central Segment	Mountain Road	Property with power lines	Industrial, logistics and R&D and/or mixed-use	Good access but site size restricted
7	Central Segment	Lake Avenue / Mountain Road	Property with power lines	Industrial, logistics and R&D and/or mixed-use	Good access but site size restricted
12	Central Segment	80 Redstone Hill Road	Across from ESPN driveway	Industrial, logistics and R&D and/or mixed-use	Access and traffic may be an issue
A14	Central Segment	2120-2170 West St (aka 1602 Middle street)	Parcels by S-end of Enterprise Dr	Industrial, logistics and R&D and/or mixed-use	May be good for ESPN / no longer part of the analysis
A15	Southern Segment	2030 Seneca Rod	Property by Winterberry Gardens	Industrial, logistics and R&D and/or mixed-use	Site size restricted / no longer part of the analysis
14	Southern Segment	1998-2004 West St	To the north of gas station	Mixed-use Multi-family residential (could include 55 plus)	Site size restricted

Site #	Location Segment	General Address	Notes & comments:	Market Supportable Use	Use Caveat
17	Southern Segment	640 West Queen St	Property with power lines	Industrial, logistics and R&D and/or mixed-use	Street identified for mixed-use
18	Southern Segment	573-597 Spring St	Large Parcel of land for development	Mixed-use Multi-family residential (could include 55 plus)	
19	Southern Segment	1268 - 1316 West St	Large Parcel of Land to the north of Churchill St and to the south of Sommers Hill Dr.	Mixed-use Multi-family residential (could include 55 plus)	Originally proposed by owner as a lifestyle center
21	Southern Segment	1105 West St	Property off Curtiss St	Industrial, logistics and R&D and/or mixed-use	Good interstate access but Site size restricted
22	Southern Segment	1134 West St	Just north of Corporate Drive	Industrial, logistics and R&D and/or mixed-use	Good interstate access but Site size restricted
23	Southern Segment	1063 West St	Across from Executive Blvd North	Industrial, logistics and R&D and/or mixed-use	Good interstate access but Site size restricted

Appendix J Synchro Capacity Analysis Files

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	749	19	180	364	5	161	0	289	2	8	0
Future Volume (vph)	3	749	19	180	364	5	161	0	289	2	8	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		150	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.996			0.999				0.850			
Flt Protected					0.984		0.950	0.950			0.991	
Satd. Flow (prot)	0	3525	0	0	3479	0	1681	1681	1583	0	1846	0
Flt Permitted		0.953			0.566		0.950	0.950			0.991	
Satd. Flow (perm)	0	3359	0	0	2001	0	1681	1681	1583	0	1846	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			2				177			
Link Speed (mph)		35			35			35			30	
Link Distance (ft)		363			299			709			169	
Travel Time (s)		7.1			5.8			13.8			3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	814	21	196	396	5	175	0	314	2	9	0
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	838	0	0	597	0	87	88	314	0	11	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			20	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		D.P+P	NA		Split	NA	pm+ov	Split	NA	
Protected Phases		2		1	1 2		5	5	1	4	4	
Permitted Phases	2			2					5			
Detector Phase	2	2		1	1 2		5	5	1	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		7.0			9.0	9.0	7.0	5.0	5.0	
Minimum Split (s)	22.4	22.4		11.0			13.0	13.0	11.0	24.3	24.3	
Total Split (s)	41.0	41.0		10.0			19.0	19.0	10.0	10.0	10.0	
Total Split (%)	51.3%	51.3%		12.5%			23.8%	23.8%	12.5%	12.5%	12.5%	
Maximum Green (s)	33.6	33.6		6.0			15.0	15.0	6.0	3.7	3.7	
Yellow Time (s)	4.4	4.4		3.0			3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		1.0			1.0	1.0	1.0	3.3	3.3	
Lost Time Adjust (s)		0.0					0.0	0.0	0.0		0.0	
Total Lost Time (s)		7.4					4.0	4.0	4.0		6.3	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2		0.2			3.0	3.0	0.2	1.5	1.5	
Recall Mode	C-Max	C-Max		Min			Min	Min	Min	None	None	
Walk Time (s)										17.0	17.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)										1.0	1.0	
Pedestrian Calls (#/hr)										0	0	
Act Effct Green (s)		45.0			55.3		10.3	10.3	20.4		5.1	
Actuated g/C Ratio		0.56			0.69		0.13	0.13	0.26		0.06	
v/c Ratio		0.44			0.40		0.40	0.41	0.59		0.09	
Control Delay		12.2			5.4		37.2	37.4	14.3		37.0	
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0	
Total Delay		12.2			5.4		37.2	37.4	14.3		37.0	
LOS		B			A		D	D	B		D	
Approach Delay		12.2			5.4			22.5			37.0	
Approach LOS		B			A			C			D	
Queue Length 50th (ft)		105			30		43	44	56		5	
Queue Length 95th (ft)		221			98		84	85	97		21	
Internal Link Dist (ft)		283			219			629			89	
Turn Bay Length (ft)							150		150			
Base Capacity (vph)		1893			1510		315	315	535		117	
Starvation Cap Reductn		0			0		0	0	0		0	
Spillback Cap Reductn		0			0		0	0	0		0	
Storage Cap Reductn		0			0		0	0	0		0	
Reduced v/c Ratio		0.44			0.40		0.28	0.28	0.59		0.09	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 73 (91%), Referenced to phase 2:EBWB, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 12.9 Intersection LOS: B
Intersection Capacity Utilization 60.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Route 229/Driveway & Route 6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	51	55	52	21	20	0	400	85	41	410	16
Future Volume (vph)	15	51	55	52	21	20	0	400	85	41	410	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.938			0.971			0.976			0.995	
Flt Protected		0.994			0.973						0.996	
Satd. Flow (prot)	0	1737	0	0	1760	0	0	1818	0	0	1846	0
Flt Permitted		0.963			0.696						0.930	
Satd. Flow (perm)	0	1683	0	0	1259	0	0	1818	0	0	1724	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		60			20			15			3	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		859			830			899			709	
Travel Time (s)		19.5			18.9			17.5			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	55	60	57	23	22	0	435	92	45	446	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	131	0	0	102	0	0	527	0	0	508	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	9.0	9.0		9.0	9.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	13.4	13.4		13.4	13.4		25.3	25.3		25.3	25.3	
Total Split (s)	24.4	24.4		24.4	24.4		25.6	25.6		25.6	25.6	
Total Split (%)	34.9%	34.9%		34.9%	34.9%		36.6%	36.6%		36.6%	36.6%	
Maximum Green (s)	20.0	20.0		20.0	20.0		20.3	20.3		20.3	20.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.8	3.8		3.8	3.8	
All-Red Time (s)	1.4	1.4		1.4	1.4		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.4			4.4			5.3			5.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		10.5			10.5			53.6			53.6	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	29%
Maximum Green (s)	16.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	9.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.15			0.15			0.77			0.77	
v/c Ratio		0.43			0.50			0.38			0.38	
Control Delay		20.0			30.8			7.4			5.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		20.0			30.8			7.4			5.1	
LOS		C			C			A			A	
Approach Delay		20.0			30.8			7.4			5.1	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)		28			33			90			65	
Queue Length 95th (ft)		70			73			243			142	
Internal Link Dist (ft)		779			750			819			629	
Turn Bay Length (ft)												
Base Capacity (vph)		523			374			1395			1320	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.25			0.27			0.38			0.38	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 45.7 (65%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.50
Intersection Signal Delay: 9.7 Intersection LOS: A
Intersection Capacity Utilization 75.4% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 2: Route 229 & Moody St/Louisianna Ave

Lane Group	Ø3
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	0	19	55	0	11	9	470	30	17	500	5
Future Volume (vph)	8	0	19	55	0	11	9	470	30	17	500	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.905			0.977			0.992			0.999	
Flt Protected		0.985			0.960			0.999			0.998	
Satd. Flow (prot)	0	1660	0	0	1747	0	0	1846	0	0	1857	0
Flt Permitted		0.894			0.741			0.990			0.979	
Satd. Flow (perm)	0	1507	0	0	1349	0	0	1829	0	0	1822	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		108			108			5			1	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		480			517			662			899	
Travel Time (s)		10.9			11.8			12.9			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	0	21	60	0	12	10	511	33	18	543	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	0	0	72	0	0	554	0	0	566	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	14.7	14.7		14.7	14.7		25.9	25.9		25.9	25.9	
Total Split (s)	19.7	19.7		19.7	19.7		25.9	25.9		25.9	25.9	
Total Split (%)	28.1%	28.1%		28.1%	28.1%		37.0%	37.0%		37.0%	37.0%	
Maximum Green (s)	15.0	15.0		15.0	15.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.8	3.8		3.8	3.8	
All-Red Time (s)	1.7	1.7		1.7	1.7		2.1	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.7			4.7			5.9			5.9	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		10.0			10.0			53.5			53.5	

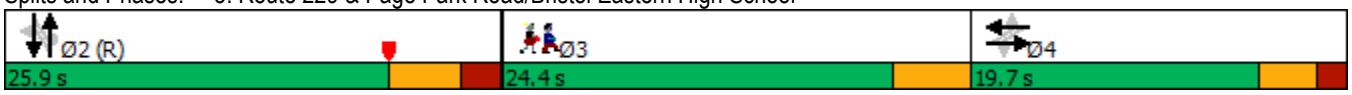
Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	22.0
Total Split (s)	24.4
Total Split (%)	35%
Maximum Green (s)	20.4
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.14			0.14			0.76			0.76	
v/c Ratio		0.10			0.25			0.40			0.41	
Control Delay		0.6			5.2			4.3			5.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		0.6			5.2			4.3			5.6	
LOS		A			A			A			A	
Approach Delay		0.6			5.2			4.3			5.6	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)		0			0			80			117	
Queue Length 95th (ft)		0			18			69			199	
Internal Link Dist (ft)		400			437			582			819	
Turn Bay Length (ft)												
Base Capacity (vph)		407			373			1399			1393	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.07			0.19			0.40			0.41	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 1 (1%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.41
Intersection Signal Delay: 4.9 Intersection LOS: A
Intersection Capacity Utilization 53.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: Route 229 & Page Park Road/Bristol Eastern High School



Lane Group	Ø3
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	NBL	NBT	SBT	SBR	NEL	NER	Ø3
Lane Configurations							
Traffic Volume (vph)	5	510	530	46	1	13	
Future Volume (vph)	5	510	530	46	1	13	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.989		0.874		
Flt Protected					0.997		
Satd. Flow (prot)	0	1863	1842	0	1623	0	
Flt Permitted		0.996			0.997		
Satd. Flow (perm)	0	1855	1842	0	1623	0	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			6		14		
Link Speed (mph)		35	35		30		
Link Distance (ft)		1271	662		359		
Travel Time (s)		24.8	12.9		8.2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	5	554	576	50	1	14	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	559	626	0	15	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		0	0		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Turn Type	Perm	NA	NA		Prot		
Protected Phases		2	2		4		3
Permitted Phases	2						
Detector Phase	2	2	2		4		
Switch Phase							
Minimum Initial (s)	20.0	20.0	20.0		10.0		1.0
Minimum Split (s)	25.0	25.0	25.0		24.5		22.5
Total Split (s)	25.0	25.0	25.0		24.0		21.0
Total Split (%)	35.7%	35.7%	35.7%		34.3%		30%
Maximum Green (s)	20.0	20.0	20.0		20.0		19.0
Yellow Time (s)	4.0	4.0	4.0		3.0		2.0
All-Red Time (s)	1.0	1.0	1.0		1.0		0.0
Lost Time Adjust (s)		0.0	0.0		0.0		
Total Lost Time (s)		5.0	5.0		4.0		
Lead/Lag					Lag		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	5.0	5.0	5.0		3.0		0.2
Recall Mode	C-Min	C-Min	C-Min		None		None
Walk Time (s)							7.0
Flash Dont Walk (s)							10.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)		66.2	66.2		10.0		

Lane Group	NBL	NBT	SBT	SBR	NEL	NER	Ø3
Actuated g/C Ratio		0.95	0.95		0.14		
v/c Ratio		0.32	0.36		0.06		
Control Delay		1.7	1.0		15.2		
Queue Delay		0.0	0.0		0.0		
Total Delay		1.7	1.0		15.2		
LOS		A	A		B		
Approach Delay		1.7	1.0		15.2		
Approach LOS		A	A		B		
Queue Length 50th (ft)		0	0		0		
Queue Length 95th (ft)		115	46		16		
Internal Link Dist (ft)		1191	582		279		
Turn Bay Length (ft)							
Base Capacity (vph)		1754	1742		473		
Starvation Cap Reductn		0	0		0		
Spillback Cap Reductn		0	0		0		
Storage Cap Reductn		0	0		0		
Reduced v/c Ratio		0.32	0.36		0.03		

Intersection Summary	
Area Type: Other	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 2 (3%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.36	
Intersection Signal Delay: 1.5	Intersection LOS: A
Intersection Capacity Utilization 46.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Woodland Street & Route 229

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations							
Traffic Volume (vph)	127	33	480	57	139	530	
Future Volume (vph)	127	33	480	57	139	530	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0		0	160		
Storage Lanes	1	0		0	1		
Taper Length (ft)	25				100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	0.972		0.986				
Flt Protected	0.962				0.950		
Satd. Flow (prot)	1742	0	1837	0	1770	1863	
Flt Permitted	0.962				0.950		
Satd. Flow (perm)	1742	0	1837	0	1770	1863	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)	11		6				
Link Speed (mph)	30		35			35	
Link Distance (ft)	835		2121			1598	
Travel Time (s)	19.0		41.3			31.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	138	36	522	62	151	576	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	174	0	584	0	151	576	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		0			12	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	16		16			16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	9		9	15		
Turn Type	Prot		NA		Prot	NA	
Protected Phases	4		2		1	1 2	3
Permitted Phases							
Detector Phase	4		2		1	1 2	
Switch Phase							
Minimum Initial (s)	9.0		15.0		5.0		1.0
Minimum Split (s)	22.0		20.9		9.0		21.0
Total Split (s)	34.0		55.0		9.0		21.0
Total Split (%)	28.6%		46.2%		7.6%		18%
Maximum Green (s)	30.0		49.1		5.0		17.0
Yellow Time (s)	3.0		4.0		3.0		4.0
All-Red Time (s)	1.0		1.9		1.0		0.0
Lost Time Adjust (s)	0.0		0.0		0.0		
Total Lost Time (s)	4.0		5.9		4.0		
Lead/Lag	Lag		Lag		Lead		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0		4.0		1.0		0.2
Recall Mode	None		Min		None		None
Walk Time (s)							7.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Flash Dont Walk (s)							10.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	12.0		31.7		5.2	43.1	
Actuated g/C Ratio	0.19		0.50		0.08	0.68	
v/c Ratio	0.52		0.63		1.04	0.46	
Control Delay	30.2		14.7		124.2	6.1	
Queue Delay	0.0		0.0		0.0	0.0	
Total Delay	30.2		14.7		124.2	6.1	
LOS	C		B		F	A	
Approach Delay	30.2		14.7			30.6	
Approach LOS	C		B			C	
Queue Length 50th (ft)	55		144		~63	79	
Queue Length 95th (ft)	140		263		#227	163	
Internal Link Dist (ft)	755		2041			1518	
Turn Bay Length (ft)					160		
Base Capacity (vph)	865		1469		145	1674	
Starvation Cap Reductn	0		0		0	0	
Spillback Cap Reductn	0		0		0	0	
Storage Cap Reductn	0		0		0	0	
Reduced v/c Ratio	0.20		0.40		1.04	0.34	

Intersection Summary

Area Type: Other
Cycle Length: 119
Actuated Cycle Length: 63.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 24.3 — Intersection LOS: C
Intersection Capacity Utilization 57.1% — ICU Level of Service B
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Route 229 & West Washington Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	115	34	470	212	38	570
Future Volume (vph)	115	34	470	212	38	570
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	490	325		130	220	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	1583	3539	1583	1770	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		37		230		
Link Speed (mph)	30		30			30
Link Distance (ft)	911		424			459
Travel Time (s)	20.7		9.6			10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	37	511	230	41	620
Shared Lane Traffic (%)						
Lane Group Flow (vph)	125	37	511	230	41	620
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4	2	4	1	1 2
Permitted Phases				2		
Detector Phase	4	4	2	4	1	1 2
Switch Phase						
Minimum Initial (s)	6.0	6.0	15.0	6.0	6.0	
Minimum Split (s)	25.0	25.0	20.9	25.0	10.9	
Total Split (s)	30.0	30.0	55.0	30.0	15.0	
Total Split (%)	30.0%	30.0%	55.0%	30.0%	15.0%	
Maximum Green (s)	26.0	26.0	49.1	26.0	10.1	
Yellow Time (s)	3.0	3.0	4.9	3.0	3.3	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	5.9	4.0	4.9	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	3.0	2.0	3.0	
Recall Mode	None	None	C-Min	None	None	
Walk Time (s)	1.0	1.0		1.0		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Flash Dont Walk (s)	20.0	20.0		20.0		
Pedestrian Calls (#/hr)	0	0		0		
Act Effct Green (s)	8.1	8.1	66.1	80.1	11.0	83.0
Actuated g/C Ratio	0.08	0.08	0.66	0.80	0.11	0.83
v/c Ratio	0.45	0.23	0.22	0.18	0.21	0.21
Control Delay	48.6	17.3	7.7	0.3	41.9	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.6	17.3	7.7	0.3	41.9	2.0
LOS	D	B	A	A	D	A
Approach Delay	41.5		5.4			4.5
Approach LOS	D		A			A
Queue Length 50th (ft)	40	0	31	0	24	30
Queue Length 95th (ft)	67	30	145	0	54	48
Internal Link Dist (ft)	831		344			379
Turn Bay Length (ft)	490	325		130	220	
Base Capacity (vph)	892	438	2339	1544	206	2891
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.08	0.22	0.15	0.20	0.21

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 86 (86%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.45
Intersection Signal Delay: 8.7 — Intersection LOS: A
Intersection Capacity Utilization 35.3% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 18: Route 229 & Broad Street

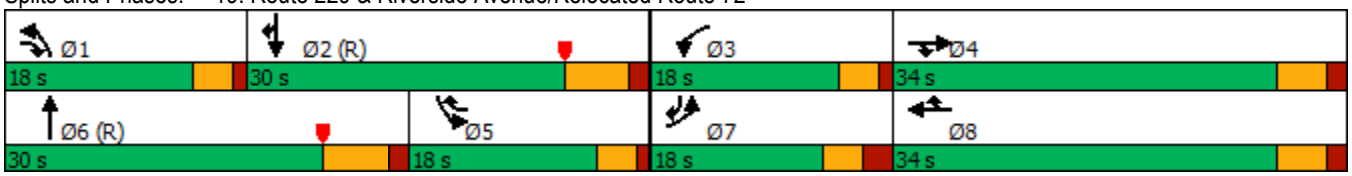
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	436	294	5	462	102	194	456	16	69	480	133
Future Volume (vph)	124	436	294	5	462	102	194	456	16	69	480	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	525		765	65		300	525		0	200		275
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	150			135			90			75		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850			0.850		0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	1770	3539	1583	1770	3522	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1863	1583	1770	3539	1583	1770	3522	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			320			137		3				121
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		918			774			907			424	
Travel Time (s)		20.9			17.6			20.6			9.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	135	474	320	5	502	111	211	496	17	75	522	145
Shared Lane Traffic (%)												
Lane Group Flow (vph)	135	474	320	5	502	111	211	513	0	75	522	145
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA		Prot	NA	pt+ov
Protected Phases	7	4	4 1	3	8	5 8	1	6		5	2	2 7
Permitted Phases												
Detector Phase	7	4	4 1	3	8	5 8	1	6		5	2	2 7
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	15.0		6.0	15.0	
Minimum Split (s)	11.2	28.4		10.0	28.4		10.0	21.4		10.0	21.4	
Total Split (s)	18.0	34.0		18.0	34.0		18.0	30.0		18.0	30.0	
Total Split (%)	18.0%	34.0%		18.0%	34.0%		18.0%	30.0%		18.0%	30.0%	
Maximum Green (s)	12.8	28.6		14.0	28.6		14.0	23.6		14.0	23.6	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	4.9		3.0	4.9	
All-Red Time (s)	2.2	1.7		1.0	1.7		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.4		4.0	5.4		4.0	6.4		4.0	6.4	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		22.0			22.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		1.0			1.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	8.4	31.6	51.9	6.0	20.0	36.5	16.3	35.5		15.1	34.3	47.9
Actuated g/C Ratio	0.08	0.32	0.52	0.06	0.20	0.36	0.16	0.36		0.15	0.34	0.48
v/c Ratio	0.47	0.81	0.33	0.05	0.71	0.17	0.73	0.41		0.28	0.43	0.18
Control Delay	48.8	42.3	2.2	45.4	42.4	1.5	56.0	27.3		39.6	30.4	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	48.8	42.3	2.2	45.4	42.4	1.5	56.0	27.3		39.6	30.4	3.3
LOS	D	D	A	D	D	A	E	C		D	C	A
Approach Delay		29.4			35.0			35.6			26.0	
Approach LOS		C			D			D			C	
Queue Length 50th (ft)	43	272	0	3	160	0	126	126		35	130	0
Queue Length 95th (ft)	71	371	38	15	185	12	#260	208		83	203	31
Internal Link Dist (ft)		838			694			827			344	
Turn Bay Length (ft)	525		765	65		300	525			200		275
Base Capacity (vph)	439	602	974	247	1025	794	293	1252		266	1213	885
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.31	0.79	0.33	0.02	0.49	0.14	0.72	0.41		0.28	0.43	0.16

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 70 (70%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 31.2 Intersection LOS: C
Intersection Capacity Utilization 68.5% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 19: Route 229 & Riverside Avenue/Relocated Route 72



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	571	336	130	189	98	139	470	105	69	880	54
Future Volume (vph)	106	571	336	130	189	98	139	470	105	69	880	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	240		240	400		0	145		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	150			150			70			90		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.944			0.949			0.973			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3341	0	1770	3359	0	1770	3444	0	1770	3507	0
Flt Permitted	0.548			0.084			0.214			0.415		
Satd. Flow (perm)	1021	3341	0	156	3359	0	399	3444	0	773	3507	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		84			66			18			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		669			802			666			907	
Travel Time (s)		15.2			18.2			15.1			20.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	621	365	141	205	107	151	511	114	75	957	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	115	986	0	141	312	0	151	625	0	75	1016	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		D.P+P	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1 2	2 5		1	5	
Permitted Phases	4			8			5			5		
Detector Phase	7	4		3	8		1 2	2 5		1	5	
Switch Phase												
Minimum Initial (s)	4.0	7.0		4.0	7.0					4.0	15.0	
Minimum Split (s)	8.2	13.0		8.0	13.0					8.0	22.3	
Total Split (s)	12.0	44.0		12.0	44.0					10.0	23.0	
Total Split (%)	8.6%	31.4%		8.6%	31.4%					7.1%	16.4%	
Maximum Green (s)	7.8	38.0		8.0	38.0					6.0	15.7	
Yellow Time (s)	3.2	3.8		3.0	3.8					3.0	4.9	
All-Red Time (s)	1.0	2.2		1.0	2.2					1.0	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)	4.2	6.0		4.0	6.0					4.0	7.3	
Lead/Lag	Lead	Lag		Lead	Lag					Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0					2.0	3.0	
Recall Mode	None	None		None	None					None	C-Min	
Walk Time (s)												

Lane Group	Ø2	Ø6
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	2	6
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	4.0	1.0
Minimum Split (s)	8.0	37.0
Total Split (s)	14.0	37.0
Total Split (%)	10%	26%
Maximum Green (s)	10.0	33.0
Yellow Time (s)	3.0	4.0
All-Red Time (s)	1.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	2.0	3.0
Recall Mode	Min	None
Walk Time (s)		7.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	55.8	45.4		60.3	47.4		58.3	48.8		34.7	21.9	
Actuated g/C Ratio	0.40	0.32		0.43	0.34		0.42	0.35		0.25	0.16	
v/c Ratio	0.25	0.86		0.73	0.26		0.31	0.52		0.29	1.84	
Control Delay	26.2	49.5		51.0	27.6		28.1	38.7		33.0	416.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	26.2	49.5		51.0	27.6		28.1	38.7		33.0	416.4	
LOS	C	D		D	C		C	D		C	F	
Approach Delay		47.1			34.9			36.6			390.1	
Approach LOS		D			C			D			F	
Queue Length 50th (ft)	58	400		72	81		78	226		37	~785	
Queue Length 95th (ft)	117	#606		#229	137		166	345		90	#959	
Internal Link Dist (ft)		589			722			586			827	
Turn Bay Length (ft)	200			240			400			145		
Base Capacity (vph)	456	1140		192	1181		490	1212		259	552	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.25	0.86		0.73	0.26		0.31	0.52		0.29	1.84	

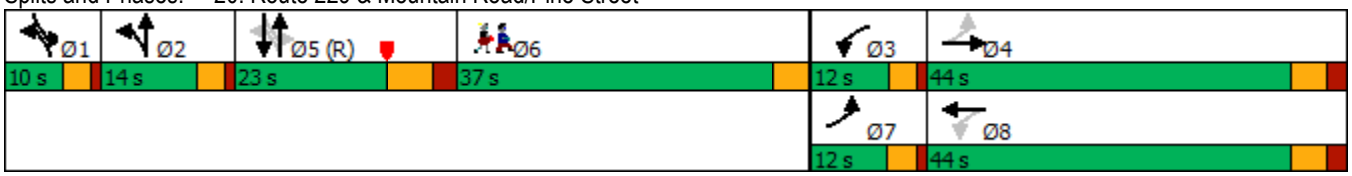
Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 88 (63%), Referenced to phase 5:NBSB, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.84
Intersection Signal Delay: 152.5 Intersection LOS: F
Intersection Capacity Utilization 85.2% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: Route 229 & Mountain Road/Pine Street



Lane Group	Ø2	Ø6
Flash Dont Walk (s)		26.0
Pedestrian Calls (#/hr)		5
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	16	111	4	0	1	9	600	24	7	1330	117
Future Volume (vph)	14	16	111	4	0	1	9	600	24	7	1330	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	130		0	70		0	55		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			25			50			70		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.870			0.850			0.994			0.988	
Flt Protected	0.950	0.999		0.950			0.950			0.950		
Satd. Flow (prot)	1681	1538	0	1770	1583	0	1770	3518	0	1770	3497	0
Flt Permitted	0.950	0.999		0.950			0.121			0.385		
Satd. Flow (perm)	1681	1538	0	1770	1583	0	225	3518	0	717	3497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		121			611			2			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		650			212			757			666	
Travel Time (s)		14.8			4.8			17.2			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	17	121	4	0	1	10	652	26	8	1446	127
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	13	140	0	4	1	0	10	678	0	8	1573	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Split	NA		Split	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases							6			2		
Detector Phase	4	4		8	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	11.5	11.5		10.8	10.8		9.0	21.7		9.0	21.7	
Total Split (s)	33.0	33.0		33.0	33.0		12.0	55.0		12.0	55.0	
Total Split (%)	20.1%	20.1%		20.1%	20.1%		7.3%	33.5%		7.3%	33.5%	
Maximum Green (s)	27.5	27.5		28.2	28.2		8.0	48.3		8.0	48.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	4.9		3.0	4.9	
All-Red Time (s)	2.5	2.5		1.8	1.8		1.0	1.8		1.0	1.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		4.8	4.8		4.0	6.7		4.0	6.7	
Lead/Lag	Lag	Lag					Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)												

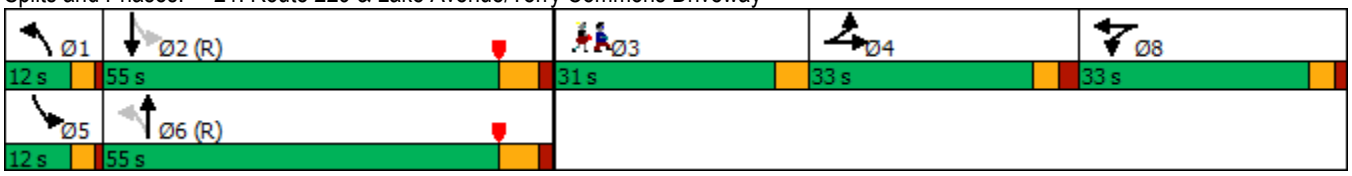
Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	19%
Maximum Green (s)	27.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	8.7	8.7		6.0	6.0		136.5	132.7		136.1	131.0	
Actuated g/C Ratio	0.05	0.05		0.04	0.04		0.83	0.81		0.83	0.80	
v/c Ratio	0.15	0.72		0.06	0.00		0.04	0.24		0.01	0.56	
Control Delay	75.5	36.6		78.5	0.0		7.6	7.4		7.4	11.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	1.1	
Total Delay	75.5	36.6		78.5	0.0		7.6	7.4		7.4	13.0	
LOS	E	D		E	A		A	A		A	B	
Approach Delay		39.9			62.8			7.4			13.0	
Approach LOS		D			E			A			B	
Queue Length 50th (ft)	14	21		4	0		1	38		1	133	
Queue Length 95th (ft)	40	98		18	0		13	272		11	863	
Internal Link Dist (ft)		570			132			677			586	
Turn Bay Length (ft)	200			130			70			55		
Base Capacity (vph)	281	358		304	778		263	2846		649	2795	
Starvation Cap Reductn	0	0		0	0		0	0		0	896	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.39		0.01	0.00		0.04	0.24		0.01	0.83	

Intersection Summary

Area Type: Other
Cycle Length: 164
Actuated Cycle Length: 164
Offset: 28 (17%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 125
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 13.2 Intersection LOS: B
Intersection Capacity Utilization 61.1% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 21: Route 229 & Lake Avenue/Terry Commons Driveway



Lane Group	Ø3
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	10	68	16	4	20	62	550	51	90	1060	46
Future Volume (vph)	42	10	68	16	4	20	62	550	51	90	1060	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		175	60		0	180		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			75			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.924				0.850		0.987			0.994	
Flt Protected		0.983			0.961		0.950			0.950		
Satd. Flow (prot)	0	1692	0	0	1790	1583	1770	3493	0	1770	3518	0
Flt Permitted		0.875			0.697		0.144			0.368		
Satd. Flow (perm)	0	1506	0	0	1298	1583	268	3493	0	685	3518	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		74				106		14			6	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		674			483			840			981	
Travel Time (s)		15.3			11.0			14.3			22.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	11	74	17	4	22	67	598	55	98	1152	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	131	0	0	21	22	67	653	0	98	1202	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		7			4 7		5	2		1	6	
Permitted Phases	7			4 7		4 7	2			6		
Detector Phase	7	7		4 7	4 7	4 7	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0					5.0	15.0		5.0	15.0	
Minimum Split (s)	10.8	10.8					9.0	21.1		9.0	21.1	
Total Split (s)	19.8	19.8					9.0	29.0		9.0	29.0	
Total Split (%)	27.2%	27.2%					12.3%	39.8%		12.3%	39.8%	
Maximum Green (s)	14.0	14.0					5.0	22.9		5.0	22.9	
Yellow Time (s)	3.0	3.0					3.0	4.2		3.0	4.2	
All-Red Time (s)	2.8	2.8					1.0	1.9		1.0	1.9	
Lost Time Adjust (s)		0.0					0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.8					4.0	6.1		4.0	6.1	
Lead/Lag	Lag	Lag					Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes										
Vehicle Extension (s)	2.0	2.0					2.0	0.2		2.0	0.2	
Recall Mode	None	None					None	C-Max		None	C-Max	
Walk Time (s)	24.0	24.0										

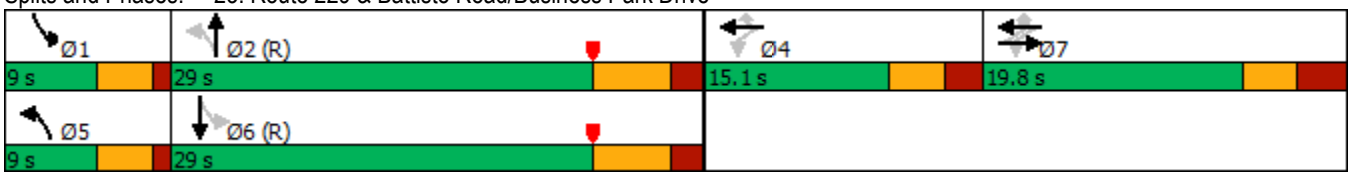
Lane Group	Ø4
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	4
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	12.1
Total Split (s)	15.1
Total Split (%)	21%
Maximum Green (s)	10.0
Yellow Time (s)	3.0
All-Red Time (s)	2.1
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	1.0	1.0										
Pedestrian Calls (#/hr)	0	0										
Act Effct Green (s)		7.9			16.4	16.4	46.4	40.6		47.3	41.1	
Actuated g/C Ratio		0.11			0.22	0.22	0.64	0.56		0.65	0.56	
v/c Ratio		0.57			0.07	0.05	0.23	0.33		0.18	0.61	
Control Delay		24.9			18.2	0.2	9.2	14.0		7.8	18.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		24.9			18.2	0.2	9.2	14.0		7.8	18.6	
LOS		C			B	A	A	B		A	B	
Approach Delay		24.9			9.0			13.5			17.8	
Approach LOS		C			A			B			B	
Queue Length 50th (ft)		25			7	0	11	101		17	231	
Queue Length 95th (ft)		70			20	0	32	175		43	#429	
Internal Link Dist (ft)		594			403			760			901	
Turn Bay Length (ft)						175	60			180		
Base Capacity (vph)		349			368	525	291	1953		538	1986	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.38			0.06	0.04	0.23	0.33		0.18	0.61	

Intersection Summary

Area Type: Other
Cycle Length: 72.9
Actuated Cycle Length: 72.9
Offset: 34 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 16.7 Intersection LOS: B
Intersection Capacity Utilization 61.9% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 23: Route 229 & Battisto Road/Business Park Drive



Lane Group	Ø4
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	71	41	60	127	13	6	540	42	294	840	81
Future Volume (vph)	114	71	41	60	127	13	6	540	42	294	840	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	14	12
Storage Length (ft)	125		0	160		0	160		0	235		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			100			250		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.945			0.986			0.989			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1760	0	1770	1837	0	1770	3500	0	1770	3726	0
Flt Permitted	0.660			0.679			0.286			0.399		
Satd. Flow (perm)	1229	1760	0	1265	1837	0	533	3500	0	743	3726	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45			9			13			26	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		744			601			1500			891	
Travel Time (s)		16.9			13.7			25.6			15.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	77	45	65	138	14	7	587	46	320	913	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	122	0	65	152	0	7	633	0	320	1001	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		12			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4			2			1 2		
Detector Phase	4	4		4	4		2	2		1	1 2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		5.0		
Minimum Split (s)	29.3	29.3		29.3	29.3		23.3	23.3		9.0		
Total Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		12.0		
Total Split (%)	40.0%	40.0%		40.0%	40.0%		40.0%	40.0%		20.0%		
Maximum Green (s)	18.7	18.7		18.7	18.7		15.7	15.7		8.0		
Yellow Time (s)	3.6	3.6		3.6	3.6		4.3	4.3		3.0		
All-Red Time (s)	1.7	1.7		1.7	1.7		4.0	4.0		1.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		
Total Lost Time (s)	5.3	5.3		5.3	5.3		8.3	8.3		4.0		
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		1.0		
Recall Mode	None	None		None	None		C-Max	C-Max		None		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	23.0	23.0		23.0	23.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	11.3	11.3		11.3	11.3		20.8	20.8		35.4	39.4	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.35	0.35		0.59	0.66	
v/c Ratio	0.54	0.33		0.27	0.43		0.04	0.52		0.52	0.41	
Control Delay	29.7	15.4		22.1	22.9		9.0	10.2		9.0	5.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.7	15.4		22.1	22.9		9.0	10.2		9.0	5.9	
LOS	C	B		C	C		A	B		A	A	
Approach Delay		22.6			22.7			10.2			6.7	
Approach LOS		C			C			B			A	
Queue Length 50th (ft)	42	24		21	47		0	11		37	66	
Queue Length 95th (ft)	76	55		44	80		m3	156		98	140	
Internal Link Dist (ft)		664			521			1420			811	
Turn Bay Length (ft)	125			160			160			235		
Base Capacity (vph)	383	579		394	578		184	1220		622	2421	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.32	0.21		0.16	0.26		0.04	0.52		0.51	0.41	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 53 (88%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 10.6 Intersection LOS: B
Intersection Capacity Utilization 71.2% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

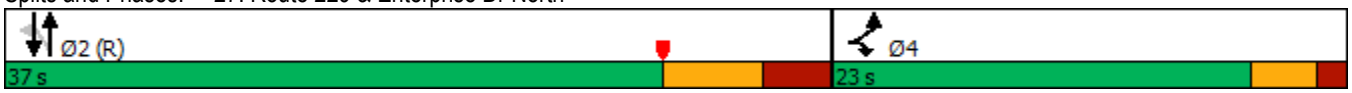
Splits and Phases: 25: Route 229 & Cross Street/Redstone Hill Road

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	75	47	47	530	815	185
Future Volume (vph)	75	47	47	530	815	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12
Grade (%)	0%			6%	0%	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850			0.972	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1770	1794	0	3419	3440	0
Flt Permitted	0.950			0.799		
Satd. Flow (perm)	1770	1794	0	2743	3440	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		51			64	
Link Speed (mph)	30			40	40	
Link Distance (ft)	411			1591	1500	
Travel Time (s)	9.3			27.1	25.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	51	51	576	886	201
Shared Lane Traffic (%)						
Lane Group Flow (vph)	82	51	0	627	1087	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	0.85	1.04	1.04	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	Prot	Perm	NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases			2		2	
Detector Phase	4	4	2	2	2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	15.0	15.0	15.0	
Minimum Split (s)	20.4	20.4	22.6	22.6	22.6	
Total Split (s)	23.0	23.0	37.0	37.0	37.0	
Total Split (%)	38.3%	38.3%	61.7%	61.7%	61.7%	
Maximum Green (s)	18.6	18.6	29.4	29.4	29.4	
Yellow Time (s)	3.0	3.0	4.4	4.4	4.4	
All-Red Time (s)	1.4	1.4	3.2	3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.4	4.4		7.6	7.6	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	0.2	0.2	0.2	
Recall Mode	None	None	C-Min	C-Min	C-Min	
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	6.6	6.6		44.8	44.8	
Actuated g/C Ratio	0.11	0.11		0.75	0.75	
v/c Ratio	0.42	0.21		0.31	0.42	
Control Delay	31.1	10.2		2.9	2.3	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	31.1	10.2		2.9	2.3	
LOS	C	B		A	A	
Approach Delay	23.1			2.9	2.3	
Approach LOS	C			A	A	
Queue Length 50th (ft)	29	0		10	41	
Queue Length 95th (ft)	61	25		19	35	
Internal Link Dist (ft)	331			1511	1420	
Turn Bay Length (ft)						
Base Capacity (vph)	548	591		2048	2584	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.15	0.09		0.31	0.42	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 31 (52%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 4.0	Intersection LOS: A
Intersection Capacity Utilization 64.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 27: Route 229 & Enterprise Dr North

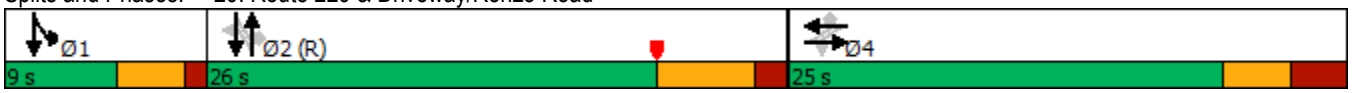


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	242	0	41	0	550	150	68	730	0
Future Volume (vph)	0	0	0	242	0	41	0	550	150	68	730	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			7%			6%	
Storage Length (ft)	0		0	0		300	280		130	165		165
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt						0.850			0.850			
Flt Protected					0.950					0.950		
Satd. Flow (prot)	0	1863	0	0	1770	1583	1798	3415	1528	1717	3433	0
Flt Permitted					0.757					0.389		
Satd. Flow (perm)	0	1863	0	0	1410	1583	1798	3415	1528	703	3433	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						125			163			
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		261			414			713			1591	
Travel Time (s)		5.9			9.4			12.2			27.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	263	0	45	0	598	163	74	793	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	263	45	0	598	163	74	793	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.05	1.05	1.05	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4		4	2		2	1 2		
Detector Phase	4	4		4	4	4	2	2	2	1	1 2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	15.0	15.0	15.0	5.0		
Minimum Split (s)	30.6	30.6		30.6	30.6	30.6	20.9	20.9	20.9	9.0		
Total Split (s)	25.0	25.0		25.0	25.0	25.0	26.0	26.0	26.0	9.0		
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	43.3%	43.3%	43.3%	15.0%		
Maximum Green (s)	19.4	19.4		19.4	19.4	19.4	20.1	20.1	20.1	5.0		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.4	4.4	4.4	3.0		
All-Red Time (s)	2.6	2.6		2.6	2.6	2.6	1.5	1.5	1.5	1.0		
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		5.6			5.6	5.6	5.9	5.9	5.9	4.0		
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	0.2	0.2	0.2	1.0		
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	24.0	24.0		24.0	24.0	24.0						
Flash Dont Walk (s)	1.0	1.0		1.0	1.0	1.0						
Pedestrian Calls (#/hr)	0	0		0	0	0						
Act Effct Green (s)					14.2	14.2		22.9	22.9	32.2	36.2	
Actuated g/C Ratio					0.24	0.24		0.38	0.38	0.54	0.60	
v/c Ratio					0.79	0.10		0.46	0.24	0.15	0.38	
Control Delay					37.7	0.4		6.5	1.9	8.2	10.7	
Queue Delay					0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay					37.7	0.4		6.5	1.9	8.2	10.7	
LOS					D	A		A	A	A	B	
Approach Delay					32.2			5.5			10.5	
Approach LOS					C			A			B	
Queue Length 50th (ft)					88	0		33	2	18	124	
Queue Length 95th (ft)					145	0		10	1	32	176	
Internal Link Dist (ft)		181			334			633			1511	
Turn Bay Length (ft)						300			130	165		
Base Capacity (vph)					455	596		1302	683	501	2068	
Starvation Cap Reductn					0	0		0	0	0	0	
Spillback Cap Reductn					0	0		0	0	0	0	
Storage Cap Reductn					0	0		0	0	0	0	
Reduced v/c Ratio					0.58	0.08		0.46	0.24	0.15	0.38	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 57 (95%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 12.0	Intersection LOS: B
Intersection Capacity Utilization 59.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 29: Route 229 & Driveway/Ronzo Road

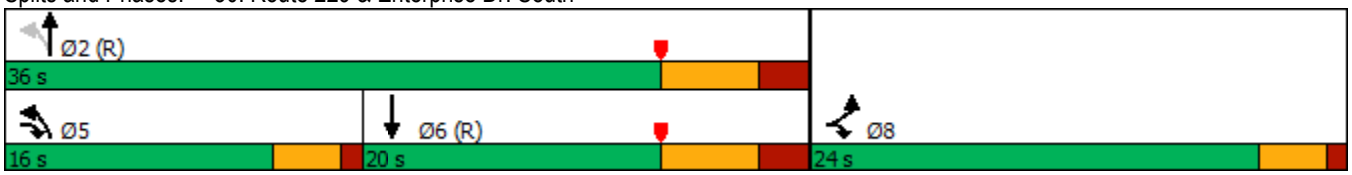


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	80	200	690	940	33
Future Volume (vph)	9	80	200	690	940	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			7%	7%	
Storage Length (ft)	0	0	745			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.995	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1708	3415	3398	0
Flt Permitted	0.950		0.189			
Satd. Flow (perm)	1770	1583	340	3415	3398	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		2			5	
Link Speed (mph)	30			40	40	
Link Distance (ft)	703			1424	713	
Travel Time (s)	16.0			24.3	12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	87	217	750	1022	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	87	217	750	1058	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.05	1.05	1.05	1.05
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	pt+ov	pm+pt	NA	NA	
Protected Phases	8	8 5	5	2	6	
Permitted Phases			2			
Detector Phase	8	8 5	5	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	24.0		9.0	21.7	21.7	
Total Split (s)	24.0		16.0	36.0	20.0	
Total Split (%)	40.0%		26.7%	60.0%	33.3%	
Maximum Green (s)	20.0		12.0	29.3	13.3	
Yellow Time (s)	3.0		3.0	4.4	4.4	
All-Red Time (s)	1.0		1.0	2.3	2.3	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0		4.0	6.7	6.7	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	C-Min	C-Min	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Walk Time (s)	19.0					
Flash Dont Walk (s)	1.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	7.9	17.8	46.0	44.7	31.5	
Actuated g/C Ratio	0.13	0.30	0.77	0.74	0.52	
v/c Ratio	0.04	0.18	0.49	0.30	0.59	
Control Delay	22.0	13.7	6.5	3.0	5.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	22.0	13.7	6.5	3.0	5.3	
LOS	C	B	A	A	A	
Approach Delay	14.6			3.8	5.3	
Approach LOS	B			A	A	
Queue Length 50th (ft)	3	22	8	50	60	
Queue Length 95th (ft)	14	42	19	3	82	
Internal Link Dist (ft)	623			1344	633	
Turn Bay Length (ft)			745			
Base Capacity (vph)	590	623	534	2542	1784	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.02	0.14	0.41	0.30	0.59	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 5.0	Intersection LOS: A
Intersection Capacity Utilization 54.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 30: Route 229 & Enterprise Dr. South

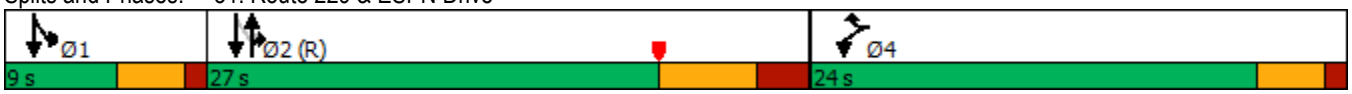


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	45	810	34	90	950
Future Volume (vph)	10	45	810	34	90	950
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			7%
Storage Length (ft)	0	0		105	95	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3539	1583	1708	3415
Flt Permitted	0.950				0.283	
Satd. Flow (perm)	1770	1583	3539	1583	509	3415
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		49		37		
Link Speed (mph)	30		40			40
Link Distance (ft)	370		539			1424
Travel Time (s)	8.4		9.2			24.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	49	880	37	98	1033
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	49	880	37	98	1033
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.05	1.05
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Prot	NA	Prot	pm+pt	NA
Protected Phases	4	4	2	2	1	1 2
Permitted Phases					1 2	
Detector Phase	4	4	2	2	1	1 2
Switch Phase						
Minimum Initial (s)	5.0	5.0	14.0	14.0	4.0	
Minimum Split (s)	22.1	22.1	20.8	20.8	8.0	
Total Split (s)	24.0	24.0	27.0	27.0	9.0	
Total Split (%)	40.0%	40.0%	45.0%	45.0%	15.0%	
Maximum Green (s)	19.9	19.9	20.2	20.2	5.0	
Yellow Time (s)	3.0	3.0	4.4	4.4	3.0	
All-Red Time (s)	1.1	1.1	2.4	2.4	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.1	4.1	6.8	6.8	4.0	
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	5.0	5.0	2.0	
Recall Mode	None	None	C-Min	C-Min	None	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Walk Time (s)	17.0	17.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	5.5	5.5	31.5	31.5	46.0	51.6
Actuated g/C Ratio	0.09	0.09	0.52	0.52	0.77	0.86
v/c Ratio	0.07	0.26	0.47	0.04	0.16	0.35
Control Delay	25.3	12.4	5.8	1.6	1.8	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.3	12.4	5.8	1.6	1.8	1.3
LOS	C	B	A	A	A	A
Approach Delay	14.7		5.6			1.3
Approach LOS	B		A			A
Queue Length 50th (ft)	4	0	18	0	1	5
Queue Length 95th (ft)	16	26	247	7	m14	65
Internal Link Dist (ft)	290		459			1344
Turn Bay Length (ft)				105	95	
Base Capacity (vph)	587	557	1855	847	625	2938
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.09	0.47	0.04	0.16	0.35

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 15.7 (26%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay: 3.6	Intersection LOS: A
Intersection Capacity Utilization 44.0%	ICU Level of Service A
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 31: Route 229 & ESPN Drive



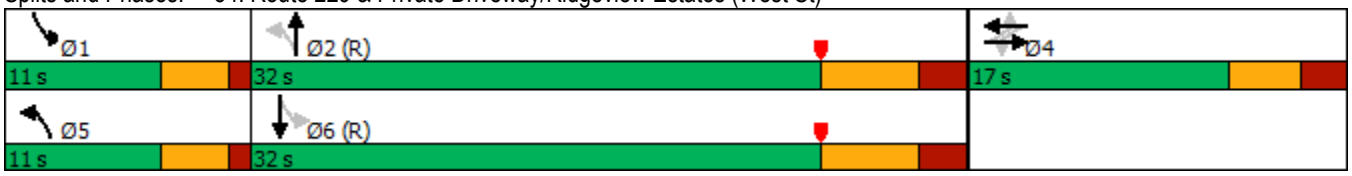
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	7	18	0	0	21	860	2	2	930	34
Future Volume (vph)	5	0	7	18	0	0	21	860	2	2	930	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		50	0		120	120		0	135		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	25			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.850									0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1863	0	1770	3539	0	1770	1853	0
Flt Permitted							0.132			0.297		
Satd. Flow (perm)	1863	1583	0	1863	1863	0	246	3539	0	553	1853	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		270									4	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		299			498			1447			922	
Travel Time (s)		6.8			11.3			24.7			15.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	0	8	20	0	0	23	935	2	2	1011	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	8	0	20	0	0	23	937	0	2	1048	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Left
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm			pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4			2			6		
Detector Phase	4	4		4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	13.4	13.4		13.4	13.4		9.0	21.6		9.0	21.6	
Total Split (s)	17.0	17.0		17.0	17.0		11.0	32.0		11.0	32.0	
Total Split (%)	28.3%	28.3%		28.3%	28.3%		18.3%	53.3%		18.3%	53.3%	
Maximum Green (s)	11.6	11.6		11.6	11.6		7.0	25.4		7.0	25.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.1	2.1		2.1	2.1		1.0	2.2		1.0	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	5.4		5.4	5.4		4.0	6.6		4.0	6.6	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	0.2		1.5	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	8.0	8.0		8.0			49.8	50.2		49.8	50.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.13	0.13		0.13			0.83	0.84		0.83	0.84	
v/c Ratio	0.02	0.02		0.08			0.07	0.32		0.00	0.68	
Control Delay	23.0	0.1		23.7			1.1	0.9		1.0	12.6	
Queue Delay	0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Delay	23.0	0.1		23.7			1.1	0.9		1.0	12.6	
LOS	C	A		C			A	A		A	B	
Approach Delay		8.9			23.7			0.9			12.6	
Approach LOS		A			C			A			B	
Queue Length 50th (ft)	2	0		6			0	0		0	316	
Queue Length 95th (ft)	10	0		23			m1	m24		m1	#685	
Internal Link Dist (ft)		219			418			1367			842	
Turn Bay Length (ft)	50						120			135		
Base Capacity (vph)	360	523		360			383	2961		605	1551	
Starvation Cap Reductn	0	0		0			0	0		0	0	
Spillback Cap Reductn	0	0		0			0	0		0	0	
Storage Cap Reductn	0	0		0			0	0		0	0	
Reduced v/c Ratio	0.01	0.02		0.06			0.06	0.32		0.00	0.68	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 50 (83%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 7.2 Intersection LOS: A
Intersection Capacity Utilization 68.7% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 34: Route 229 & Private Driveway/Ridgeview Estates (West St)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	90	32	46	11	3	180	800	50	116	820	23
Future Volume (vph)	79	90	32	46	11	3	180	800	50	116	820	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	80		0	125		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.978			0.970			0.991			0.996	
Flt Protected		0.981		0.950			0.950			0.950		
Satd. Flow (prot)	0	1787	0	1770	1807	0	1770	3507	0	1770	1855	0
Flt Permitted		0.865		0.587			0.138			0.277		
Satd. Flow (perm)	0	1576	0	1093	1807	0	257	3507	0	516	1855	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			3			14			3	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		906			1161			1141			1447	
Travel Time (s)		20.6			26.4			19.4			24.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	98	35	50	12	3	196	870	54	126	891	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	219	0	50	15	0	196	924	0	126	916	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Detector Phase	4	4		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	25.4	25.4		25.4	25.4		9.0	22.1		9.0	22.1	
Total Split (s)	15.0	15.0		15.0	15.0		11.0	34.0		11.0	34.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		18.3%	56.7%		18.3%	56.7%	
Maximum Green (s)	8.6	8.6		8.6	8.6		7.0	26.9		7.0	26.9	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	2.7		1.0	2.7	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.4		6.4	6.4		4.0	7.1		4.0	7.1	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	0.2		2.0	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	18.0	18.0		18.0	18.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		8.6		8.6	8.6		38.2	29.8		36.5	27.5	
Actuated g/C Ratio		0.14		0.14	0.14		0.64	0.50		0.61	0.46	
v/c Ratio		0.92		0.32	0.06		0.60	0.53		0.29	1.08	
Control Delay		70.8		29.3	20.9		15.9	18.1		3.2	68.2	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		70.8		29.3	20.9		15.9	18.1		3.2	68.2	
LOS		E		C	C		B	B		A	E	
Approach Delay		70.8			27.3			17.7			60.4	
Approach LOS		E			C			B			E	
Queue Length 50th (ft)		75		17	4		38	153		3	~406	
Queue Length 95th (ft)		#192		45	18		m65	250		m0	#620	
Internal Link Dist (ft)		826			1081			1061			1367	
Turn Bay Length (ft)							80			125		
Base Capacity (vph)		237		156	261		341	1746		469	851	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.92		0.32	0.06		0.57	0.53		0.27	1.08	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 24 (40%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.08
Intersection Signal Delay: 40.9 Intersection LOS: D
Intersection Capacity Utilization 86.8% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 35: Route 229 & West Queen Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	32	123	61	1025	870	31
Future Volume (vph)	32	123	61	1025	870	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt		0.850			0.995	
Flt Protected	0.950			0.997		
Satd. Flow (prot)	1770	1583	0	3529	1853	0
Flt Permitted	0.950			0.666		
Satd. Flow (perm)	1770	1583	0	2357	1853	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		134			4	
Link Speed (mph)	30			40	40	
Link Distance (ft)	745			2535	1141	
Travel Time (s)	16.9			43.2	19.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	134	66	1114	946	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	35	134	0	1180	980	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	Perm	D.P+P	NA	NA	
Protected Phases	4		1	1 2	2	
Permitted Phases		4	2			
Detector Phase	4	4	1	1 2	2	
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		15.0	
Minimum Split (s)	30.0	30.0	8.0		24.8	
Total Split (s)	18.0	18.0	8.0		34.0	
Total Split (%)	30.0%	30.0%	13.3%		56.7%	
Maximum Green (s)	14.0	14.0	4.0		27.2	
Yellow Time (s)	3.0	3.0	3.0		4.4	
All-Red Time (s)	1.0	1.0	1.0		2.4	
Lost Time Adjust (s)	0.0	0.0			0.0	
Total Lost Time (s)	4.0	4.0			6.8	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	None	None	Max		C-Max	
Walk Time (s)	15.0	15.0				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	7.7	7.7		42.5	27.2	
Actuated g/C Ratio	0.13	0.13		0.71	0.45	
v/c Ratio	0.15	0.42		0.62	1.16	
Control Delay	24.4	9.6		5.3	87.1	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	24.4	9.6		5.3	87.1	
LOS	C	A		A	F	
Approach Delay	12.6			5.3	87.1	
Approach LOS	B			A	F	
Queue Length 50th (ft)	12	0		58	~421	
Queue Length 95th (ft)	32	40		109	m#385	
Internal Link Dist (ft)	665			2455	1061	
Turn Bay Length (ft)		100				
Base Capacity (vph)	413	472		1914	842	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.08	0.28		0.62	1.16	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 44 (73%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.16
Intersection Signal Delay: 40.3 Intersection LOS: D
Intersection Capacity Utilization 86.5% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 36: Route 229 & Welch Road

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	26	1000	31	76	920
Future Volume (vph)	30	26	1000	31	76	920
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		7%			0%
Storage Length (ft)	0	95		0	205	
Storage Lanes	1	1		0	1	
Taper Length (ft)	100				180	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt		0.850	0.995			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3398	0	1770	1863
Flt Permitted	0.950				0.220	
Satd. Flow (perm)	1770	1583	3398	0	410	1863
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		28	5			
Link Speed (mph)	30		40			40
Link Distance (ft)	911		3080			2535
Travel Time (s)	20.7		52.5			43.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	28	1087	34	83	1000
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	28	1121	0	83	1000
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.05	1.05	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	4		2		1	1 2
Permitted Phases		4			1 2	
Detector Phase	4	4	2		1	1 2
Switch Phase						
Minimum Initial (s)	9.0	9.0	25.0		5.0	
Minimum Split (s)	20.0	20.0	32.6		9.0	
Total Split (s)	24.0	24.0	77.6		13.0	
Total Split (%)	20.9%	20.9%	67.7%		11.3%	
Maximum Green (s)	20.0	20.0	70.0		9.0	
Yellow Time (s)	3.0	3.0	4.9		3.0	
All-Red Time (s)	1.0	1.0	2.7		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0	7.6		4.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	4.0		2.0	
Recall Mode	None	None	Min		Min	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	9.7	9.7	59.1		72.4	78.0
Actuated g/C Ratio	0.11	0.11	0.65		0.80	0.86
v/c Ratio	0.17	0.14	0.50		0.18	0.62
Control Delay	45.8	17.9	9.0		2.5	4.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	45.8	17.9	9.0		2.5	4.9
LOS	D	B	A		A	A
Approach Delay	33.0		9.0			4.7
Approach LOS	C		A			A
Queue Length 50th (ft)	21	0	167		7	165
Queue Length 95th (ft)	52	27	216		14	260
Internal Link Dist (ft)	831		3000			2455
Turn Bay Length (ft)		95			205	
Base Capacity (vph)	417	395	2597		473	1672
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.08	0.07	0.43		0.18	0.60

Intersection Summary	
Area Type: Other	
Cycle Length: 114.6	
Actuated Cycle Length: 90.5	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 7.6	Intersection LOS: A
Intersection Capacity Utilization 62.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 38: Route 229 & Spring Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	29	960	32	76	890
Future Volume (vph)	12	29	960	32	76	890
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	12	12	12	12
Grade (%)	0%		0%			7%
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.904		0.995			
Flt Protected	0.986					0.996
Satd. Flow (prot)	1771	0	3522	0	0	1790
Flt Permitted	0.986					0.838
Satd. Flow (perm)	1771	0	3522	0	0	1506
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	32		8			
Link Speed (mph)	30		40			40
Link Distance (ft)	335		424			3080
Travel Time (s)	7.6		7.2			52.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	32	1043	35	83	967
Shared Lane Traffic (%)						
Lane Group Flow (vph)	45	0	1078	0	0	1050
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	14		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.92	0.92	1.00	1.00	1.05	1.05
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot		NA		Perm	NA
Protected Phases	4		2			2
Permitted Phases					2	
Detector Phase	4		2		2	2
Switch Phase						
Minimum Initial (s)	9.0		15.0		15.0	15.0
Minimum Split (s)	23.0		21.3		21.3	21.3
Total Split (s)	24.0		46.3		46.3	46.3
Total Split (%)	34.1%		65.9%		65.9%	65.9%
Maximum Green (s)	20.0		40.0		40.0	40.0
Yellow Time (s)	3.0		4.6		4.6	4.6
All-Red Time (s)	1.0		1.7		1.7	1.7
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	4.0		6.3			6.3
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.5		2.5		2.5	2.5
Recall Mode	None		Min		Min	Min
Walk Time (s)	18.0					
Flash Dont Walk (s)	1.0					

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	9.0		56.9			56.9
Actuated g/C Ratio	0.14		0.89			0.89
v/c Ratio	0.16		0.35			0.79
Control Delay	14.8		2.4			13.0
Queue Delay	0.0		0.0			0.0
Total Delay	14.8		2.4			13.0
LOS	B		A			B
Approach Delay	14.8		2.4			13.0
Approach LOS	B		A			B
Queue Length 50th (ft)	4		0			0
Queue Length 95th (ft)	29		104			#644
Internal Link Dist (ft)	255		344			3000
Turn Bay Length (ft)						
Base Capacity (vph)	576		3124			1335
Starvation Cap Reductn	0		192			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.08		0.37			0.79

Intersection Summary	
Area Type: Other	
Cycle Length: 70.3	
Actuated Cycle Length: 64.2	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 7.8	Intersection LOS: A
Intersection Capacity Utilization 99.9%	ICU Level of Service F
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 41: Route 229 & Curtiss Street

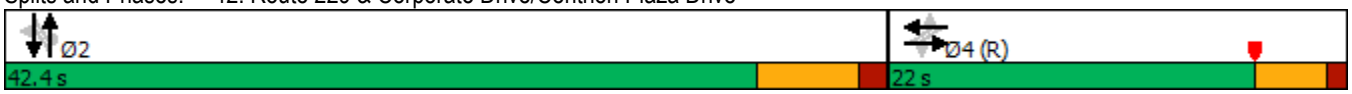
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	1	54	5	0	6	82	940	1	1	860	120
Future Volume (vph)	41	1	54	5	0	6	82	940	1	1	860	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	65		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.924			0.921						0.982	
Flt Protected		0.979			0.980		0.950			0.950		
Satd. Flow (prot)	0	1685	0	0	1681	0	1770	3539	0	1770	1829	0
Flt Permitted		0.856			0.893		0.153			0.270		
Satd. Flow (perm)	0	1473	0	0	1532	0	285	3539	0	503	1829	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		59			58						18	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		287			281			412			424	
Travel Time (s)		6.5			6.4			7.0			7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	1	59	5	0	7	89	1022	1	1	935	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	105	0	0	12	0	89	1023	0	1	1065	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			15	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	17.5	17.5		17.5	17.5		21.4	21.4		21.4	21.4	
Total Split (s)	22.0	22.0		22.0	22.0		42.4	42.4		42.4	42.4	
Total Split (%)	34.2%	34.2%		34.2%	34.2%		65.8%	65.8%		65.8%	65.8%	
Maximum Green (s)	17.5	17.5		17.5	17.5		36.0	36.0		36.0	36.0	
Yellow Time (s)	3.4	3.4		3.4	3.4		4.9	4.9		4.9	4.9	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		6.4	6.4		6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Recall Mode	C-Min	C-Min		C-Min	C-Min		Max	Max		Max	Max	
Walk Time (s)	12.0	12.0		12.0	12.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		8.0			8.0		45.5	45.5		45.5	45.5	
Actuated g/C Ratio		0.12			0.12		0.71	0.71		0.71	0.71	
v/c Ratio		0.45			0.05		0.44	0.41		0.00	0.82	
Control Delay		19.9			0.4		13.3	4.7		3.0	14.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	8.2	
Total Delay		19.9			0.4		13.3	4.7		3.0	22.7	
LOS		B			A		B	A		A	C	
Approach Delay		19.9			0.4			5.3			22.6	
Approach LOS		B			A			A			C	
Queue Length 50th (ft)		17			0		11	62		0	206	
Queue Length 95th (ft)		55			0		57	113		1	#595	
Internal Link Dist (ft)		207			201			332			344	
Turn Bay Length (ft)							100			65		
Base Capacity (vph)		443			458		201	2502		355	1298	
Starvation Cap Reductn		0			0		0	0		0	205	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.24			0.03		0.44	0.41		0.00	0.97	

Intersection Summary

Area Type: Other
Cycle Length: 64.4
Actuated Cycle Length: 64.4
Offset: 49 (76%), Referenced to phase 4:EBWB, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 14.0 Intersection LOS: B
Intersection Capacity Utilization 84.2% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 42: Route 229 & Corporate Drive/Centrion Plaza Drive



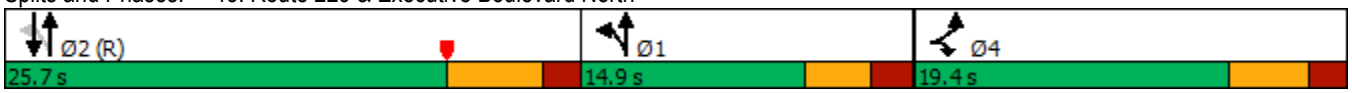
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	13	90	1010	920	40
Future Volume (vph)	9	13	90	1010	920	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	360	220			240
Storage Lanes	1	1	1			1
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.994	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3518	0
Flt Permitted	0.950		0.220			
Satd. Flow (perm)	1770	1583	410	3539	3518	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		14			8	
Link Speed (mph)	30			40	40	
Link Distance (ft)	694			570	291	
Travel Time (s)	15.8			9.7	5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	14	98	1098	1000	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	14	98	1098	1043	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	8	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	Prot	pm+pt	NA	NA	
Protected Phases	4	4	1	1 2	2	
Permitted Phases			1 2			
Detector Phase	4	4	1	1 2	2	
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		15.0	
Minimum Split (s)	12.4	12.4	8.9		21.0	
Total Split (s)	19.4	19.4	14.9		25.7	
Total Split (%)	32.3%	32.3%	24.8%		42.8%	
Maximum Green (s)	14.0	14.0	10.0		19.7	
Yellow Time (s)	3.6	3.6	3.0		4.3	
All-Red Time (s)	1.8	1.8	1.9		1.7	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.4	5.4	4.9		6.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.5	2.5	2.0		0.2	
Recall Mode	None	None	None		C-Max	
Walk Time (s)	24.0	24.0				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	7.0	7.0	45.2	53.1	35.2	
Actuated g/C Ratio	0.12	0.12	0.75	0.88	0.59	
v/c Ratio	0.05	0.07	0.19	0.35	0.51	
Control Delay	24.2	13.9	4.1	2.3	10.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	24.2	13.9	4.1	2.3	10.0	
LOS	C	B	A	A	B	
Approach Delay	18.2			2.4	10.0	
Approach LOS	B			A	B	
Queue Length 50th (ft)	3	0	0	0	78	
Queue Length 95th (ft)	15	14	18	92	206	
Internal Link Dist (ft)	614			490	211	
Turn Bay Length (ft)		360	220			
Base Capacity (vph)	413	380	542	3018	2065	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.02	0.04	0.18	0.36	0.51	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 59 (98%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 6.1 — Intersection LOS: A
Intersection Capacity Utilization 51.1% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 43: Route 229 & Executive Boulevard North

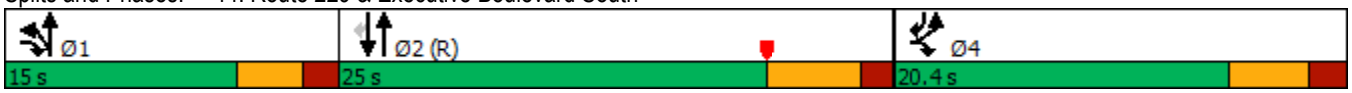


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	90	330	1050	790	180
Future Volume (vph)	50	90	330	1050	790	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			5%	0%	
Storage Length (ft)	860	370	335			250
Storage Lanes	1	1	2			1
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	0.88	0.97	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	2787	3347	3451	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	2787	3347	3451	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		49				67
Link Speed (mph)	30			40	40	
Link Distance (ft)	945			579	570	
Travel Time (s)	21.5			9.9	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	98	359	1141	859	196
Shared Lane Traffic (%)						
Lane Group Flow (vph)	54	98	359	1141	859	196
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			24	20	
Link Offset(ft)	0			0	-4	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	pt+ov	Prot	NA	NA	pm+ov
Protected Phases	4	1 4	1	1 2	2	4
Permitted Phases		1 4				2
Detector Phase	4	1 4	1	1 2	2	4
Switch Phase						
Minimum Initial (s)	7.0		4.0		15.0	7.0
Minimum Split (s)	12.4		8.6		20.8	12.4
Total Split (s)	20.4		15.0		25.0	20.4
Total Split (%)	33.8%		24.8%		41.4%	33.8%
Maximum Green (s)	15.0		10.4		19.2	15.0
Yellow Time (s)	3.6		3.0		4.3	3.6
All-Red Time (s)	1.8		1.6		1.5	1.8
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.4		4.6		5.8	5.4
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.5		2.0		0.2	2.5
Recall Mode	None		None		C-Max	None

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Walk Time (s)	22.0					22.0
Flash Dont Walk (s)	1.0					1.0
Pedestrian Calls (#/hr)	0					0
Act Effct Green (s)	7.6	28.7	15.8	42.8	21.3	34.6
Actuated g/C Ratio	0.13	0.48	0.26	0.71	0.35	0.57
v/c Ratio	0.24	0.07	0.41	0.47	0.69	0.21
Control Delay	26.5	4.7	19.7	4.7	21.1	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	4.7	19.7	4.7	21.1	5.1
LOS	C	A	B	A	C	A
Approach Delay	12.4			8.3	18.1	
Approach LOS	B			A	B	
Queue Length 50th (ft)	18	4	52	68	143	21
Queue Length 95th (ft)	45	15	87	114	207	46
Internal Link Dist (ft)	865			499	490	
Turn Bay Length (ft)	860	370	335			250
Base Capacity (vph)	439	1351	873	2447	1246	1123
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.07	0.41	0.47	0.69	0.17

Intersection Summary	
Area Type: Other	
Cycle Length: 60.4	
Actuated Cycle Length: 60.4	
Offset: 21 (35%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 12.3	Intersection LOS: B
Intersection Capacity Utilization 50.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 44: Route 229 & Executive Boulevard South



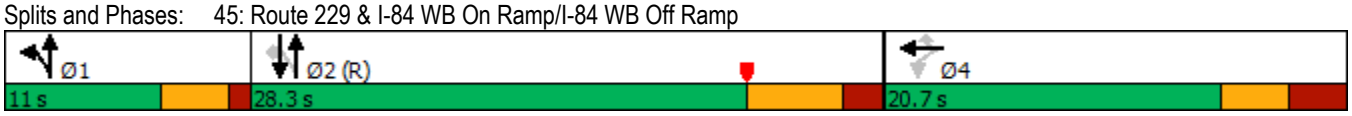
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	130	0	200	39	1130	0	0	240	640
Future Volume (vph)	0	0	0	130	0	200	39	1130	0	0	240	640
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			5%	
Storage Length (ft)	0		0	240		440	90		0	0		250
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			100			100			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950	0.950		0.950					
Satd. Flow (prot)	0	0	0	1681	1681	1583	1770	3539	0	0	3451	1544
Flt Permitted				0.950	0.950		0.591					
Satd. Flow (perm)	0	0	0	1681	1681	1583	1101	3539	0	0	3451	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						131						696
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		337			747			508			579	
Travel Time (s)		7.7			17.0			8.7			9.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	141	0	217	42	1228	0	0	261	696
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	0	0	70	71	217	42	1228	0	0	261	696
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			18			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					4		1	1 2			2	
Permitted Phases				4		4	1 2					2
Detector Phase				4	4	4	1	1 2			2	2
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0	5.0				15.0	15.0
Minimum Split (s)				12.7	12.7	12.7	9.0				21.2	21.2
Total Split (s)				20.7	20.7	20.7	11.0				28.3	28.3
Total Split (%)				34.5%	34.5%	34.5%	18.3%				47.2%	47.2%
Maximum Green (s)				15.0	15.0	15.0	7.0				22.1	22.1
Yellow Time (s)				3.0	3.0	3.0	3.0				4.3	4.3
All-Red Time (s)				2.7	2.7	2.7	1.0				1.9	1.9
Lost Time Adjust (s)				0.0	0.0	0.0	0.0				0.0	0.0
Total Lost Time (s)				5.7	5.7	5.7	4.0				6.2	6.2
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)				2.0	2.0	2.0	2.0				0.2	0.2
Recall Mode				None	None	None	None				C-Max	C-Max

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)				9.4	9.4	9.4	36.9	40.9			23.1	23.1
Actuated g/C Ratio				0.16	0.16	0.16	0.62	0.68			0.38	0.38
v/c Ratio				0.27	0.27	0.61	0.05	0.51			0.20	0.68
Control Delay				23.6	23.7	17.4	4.3	6.1			13.2	5.4
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				23.6	23.7	17.4	4.3	6.1			13.2	5.4
LOS				C	C	B	A	A			B	A
Approach Delay					19.9			6.0			7.5	
Approach LOS					B			A			A	
Queue Length 50th (ft)				24	25	29	4	79			33	0
Queue Length 95th (ft)				50	50	76	15	176			55	61
Internal Link Dist (ft)		257			667			428			499	
Turn Bay Length (ft)				240		440	90					250
Base Capacity (vph)				420	420	494	807	2414			1331	1023
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.17	0.17	0.44	0.05	0.51			0.20	0.68

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 20 (33%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 8.5 Intersection LOS: A
Intersection Capacity Utilization 62.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 45: Route 229 & I-84 WB On Ramp/I-84 WB Off Ramp



Appendix C Synchro Capacity Analysis

PM Synchro Report

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	720	4	274	942	7	404	0	312	2	8	2
Future Volume (vph)	2	720	4	274	942	7	404	0	312	2	8	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		150	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.999			0.999				0.850		0.979	
Flt Protected					0.989		0.950	0.950			0.992	
Satd. Flow (prot)	0	3536	0	0	3497	0	1681	1681	1583	0	1809	0
Flt Permitted		0.952			0.585		0.950	0.950			0.992	
Satd. Flow (perm)	0	3366	0	0	2068	0	1681	1681	1583	0	1809	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			1				202		2	
Link Speed (mph)		35			35			35			30	
Link Distance (ft)		363			299			709			169	
Travel Time (s)		7.1			5.8			13.8			3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	783	4	298	1024	8	439	0	339	2	9	2
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	789	0	0	1330	0	219	220	339	0	13	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			20	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		D.P+P	NA		Split	NA	pm+ov	Split	NA	
Protected Phases		2		1	1 2		5	5	1	4	4	
Permitted Phases	2			2					5			
Detector Phase	2	2		1	1 2		5	5	1	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		7.0			9.0	9.0	7.0	5.0	5.0	
Minimum Split (s)	22.4	22.4		11.0			13.0	13.0	11.0	24.3	24.3	
Total Split (s)	54.0	54.0		10.0			25.0	25.0	10.0	11.0	11.0	
Total Split (%)	54.0%	54.0%		10.0%			25.0%	25.0%	10.0%	11.0%	11.0%	
Maximum Green (s)	46.6	46.6		6.0			21.0	21.0	6.0	4.7	4.7	
Yellow Time (s)	4.4	4.4		3.0			3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		1.0			1.0	1.0	1.0	3.3	3.3	
Lost Time Adjust (s)		0.0					0.0	0.0	0.0		0.0	
Total Lost Time (s)		7.4					4.0	4.0	4.0		6.3	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2		0.2			3.0	3.0	0.2	1.5	1.5	
Recall Mode	C-Max	C-Max		Min			Min	Min	Min	None	None	
Walk Time (s)										17.0	17.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)										1.0	1.0	
Pedestrian Calls (#/hr)										0	0	
Act Effct Green (s)		46.6			68.3		17.5	17.5	39.0		4.9	
Actuated g/C Ratio		0.47			0.68		0.18	0.18	0.39		0.05	
v/c Ratio		0.50			0.79		0.75	0.75	0.46		0.14	
Control Delay		20.0			15.1		54.7	55.0	10.3		44.9	
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0	
Total Delay		20.0			15.1		54.7	55.0	10.3		44.9	
LOS		B			B		D	D	B		D	
Approach Delay		20.0			15.1			35.4			44.9	
Approach LOS		B			B			D			D	
Queue Length 50th (ft)		178			157		140	140	54		7	
Queue Length 95th (ft)		232			#513		217	217	125		27	
Internal Link Dist (ft)		283			219			629			89	
Turn Bay Length (ft)							150		150			
Base Capacity (vph)		1569			1675		353	353	740		90	
Starvation Cap Reductn		0			0		0	0	0		0	
Spillback Cap Reductn		0			0		0	0	0		0	
Storage Cap Reductn		0			0		0	0	0		0	
Reduced v/c Ratio		0.50			0.79		0.62	0.62	0.46		0.14	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 54 (54%), Referenced to phase 2:EBWB, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 22.0 Intersection LOS: C
Intersection Capacity Utilization 85.0% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Route 229/Driveway & Route 6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	30	58	96	74	0	5	790	128	32	610	0
Future Volume (vph)	8	30	58	96	74	0	5	790	128	32	610	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.919						0.981				
Flt Protected		0.996			0.973						0.997	
Satd. Flow (prot)	0	1705	0	0	1812	0	0	1827	0	0	1857	0
Flt Permitted		0.969			0.793			0.997			0.927	
Satd. Flow (perm)	0	1659	0	0	1477	0	0	1822	0	0	1727	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		63						12				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		859			830			899			709	
Travel Time (s)		19.5			18.9			17.5			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	33	63	104	80	0	5	859	139	35	663	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	105	0	0	184	0	0	1003	0	0	698	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	9.0	9.0		9.0	9.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	13.4	13.4		13.4	13.4		25.3	25.3		25.3	25.3	
Total Split (s)	24.4	24.4		24.4	24.4		25.6	25.6		25.6	25.6	
Total Split (%)	34.9%	34.9%		34.9%	34.9%		36.6%	36.6%		36.6%	36.6%	
Maximum Green (s)	20.0	20.0		20.0	20.0		20.3	20.3		20.3	20.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.8	3.8		3.8	3.8	
All-Red Time (s)	1.4	1.4		1.4	1.4		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.4			4.4			5.3			5.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		14.1			14.1			46.2			46.2	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	29%
Maximum Green (s)	16.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	9.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.20			0.20			0.66			0.66	
v/c Ratio		0.27			0.62			0.83			0.61	
Control Delay		12.2			34.1			21.9			10.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		12.2			34.1			21.9			10.8	
LOS		B			C			C			B	
Approach Delay		12.2			34.1			21.9			10.8	
Approach LOS		B			C			C			B	
Queue Length 50th (ft)		15			73			406			143	
Queue Length 95th (ft)		47			120			#645			317	
Internal Link Dist (ft)		779			750			819			629	
Turn Bay Length (ft)												
Base Capacity (vph)		519			422			1207			1140	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.20			0.44			0.83			0.61	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 45.7 (65%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 18.6 Intersection LOS: B
Intersection Capacity Utilization 78.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Route 229 & Moody St/Louisianna Ave

Lane Group	Ø3
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	4	6	28	4	11	32	900	25	11	760	20
Future Volume (vph)	15	4	6	28	4	11	32	900	25	11	760	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.965			0.965			0.996			0.997	
Flt Protected		0.971			0.968			0.998			0.999	
Satd. Flow (prot)	0	1745	0	0	1740	0	0	1852	0	0	1855	0
Flt Permitted		0.791			0.787			0.957			0.984	
Satd. Flow (perm)	0	1422	0	0	1415	0	0	1776	0	0	1827	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			12			2			2	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		480			517			662			899	
Travel Time (s)		10.9			11.8			12.9			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	4	7	30	4	12	35	978	27	12	826	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	27	0	0	46	0	0	1040	0	0	860	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	14.7	14.7		14.7	14.7		25.9	25.9		25.9	25.9	
Total Split (s)	19.7	19.7		19.7	19.7		25.9	25.9		25.9	25.9	
Total Split (%)	28.1%	28.1%		28.1%	28.1%		37.0%	37.0%		37.0%	37.0%	
Maximum Green (s)	15.0	15.0		15.0	15.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.8	3.8		3.8	3.8	
All-Red Time (s)	1.7	1.7		1.7	1.7		2.1	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.7			4.7			5.9			5.9	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		10.0			10.0			57.6			57.6	

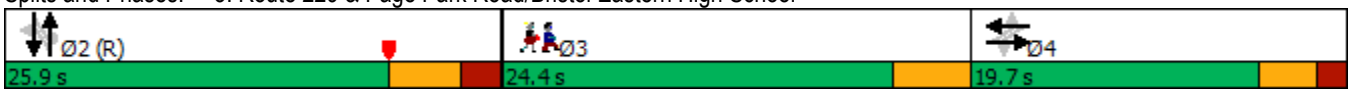
Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	22.0
Total Split (s)	24.4
Total Split (%)	35%
Maximum Green (s)	20.4
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.14			0.14			0.82			0.82	
v/c Ratio		0.13			0.22			0.71			0.57	
Control Delay		23.2			24.1			6.6			5.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		23.2			24.1			6.6			5.3	
LOS		C			C			A			A	
Approach Delay		23.2			24.1			6.6			5.3	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)		8			13			139			247	
Queue Length 95th (ft)		28			41			#247			77	
Internal Link Dist (ft)		400			437			582			819	
Turn Bay Length (ft)												
Base Capacity (vph)		310			312			1462			1504	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.09			0.15			0.71			0.57	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 1 (1%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 6.7 Intersection LOS: A
Intersection Capacity Utilization 84.6% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Route 229 & Page Park Road/Bristol Eastern High School



Lane Group	Ø3
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	NBL	NBT	SBT	SBR	NEL	NER	Ø3
Lane Configurations							
Traffic Volume (vph)	27	850	760	32	109	30	
Future Volume (vph)	27	850	760	32	109	30	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.995		0.970		
Flt Protected		0.998			0.962		
Satd. Flow (prot)	0	1859	1853	0	1738	0	
Flt Permitted		0.965			0.962		
Satd. Flow (perm)	0	1798	1853	0	1738	0	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			3		20		
Link Speed (mph)		35	35		30		
Link Distance (ft)		1271	662		359		
Travel Time (s)		24.8	12.9		8.2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	29	924	826	35	118	33	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	953	861	0	151	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		0	0		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Turn Type	Perm	NA	NA		Prot		
Protected Phases		2	2		4		3
Permitted Phases	2						
Detector Phase	2	2	2		4		
Switch Phase							
Minimum Initial (s)	20.0	20.0	20.0		10.0		1.0
Minimum Split (s)	25.0	25.0	25.0		24.5		22.5
Total Split (s)	25.0	25.0	25.0		24.0		21.0
Total Split (%)	35.7%	35.7%	35.7%		34.3%		30%
Maximum Green (s)	20.0	20.0	20.0		20.0		19.0
Yellow Time (s)	4.0	4.0	4.0		3.0		2.0
All-Red Time (s)	1.0	1.0	1.0		1.0		0.0
Lost Time Adjust (s)		0.0	0.0		0.0		
Total Lost Time (s)		5.0	5.0		4.0		
Lead/Lag					Lag		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	5.0	5.0	5.0		3.0		0.2
Recall Mode	C-Min	C-Min	C-Min		None		None
Walk Time (s)							7.0
Flash Dont Walk (s)							10.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)		53.2	53.2		11.6		

Lane Group	NBL	NBT	SBT	SBR	NEL	NER	Ø3
Actuated g/C Ratio		0.76	0.76		0.17		
v/c Ratio		0.70	0.61		0.50		
Control Delay		10.5	3.8		28.3		
Queue Delay		0.0	0.0		0.0		
Total Delay		10.5	3.8		28.3		
LOS		B	A		C		
Approach Delay		10.5	3.8		28.3		
Approach LOS		B	A		C		
Queue Length 50th (ft)		192	48		53		
Queue Length 95th (ft)		#445	85		98		
Internal Link Dist (ft)		1191	582		279		
Turn Bay Length (ft)							
Base Capacity (vph)		1365	1408		510		
Starvation Cap Reductn		0	0		0		
Spillback Cap Reductn		0	0		0		
Storage Cap Reductn		0	0		0		
Reduced v/c Ratio		0.70	0.61		0.30		

Intersection Summary	
Area Type: Other	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 2 (3%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 8.9	Intersection LOS: A
Intersection Capacity Utilization 82.4%	ICU Level of Service E
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Woodland Street & Route 229

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations							
Traffic Volume (vph)	137	168	697	126	125	680	
Future Volume (vph)	137	168	697	126	125	680	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0		0	160		
Storage Lanes	1	0		0	1		
Taper Length (ft)	25				100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	0.926		0.979				
Flt Protected	0.978				0.950		
Satd. Flow (prot)	1687	0	1824	0	1770	1863	
Flt Permitted	0.978				0.950		
Satd. Flow (perm)	1687	0	1824	0	1770	1863	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)	50		9				
Link Speed (mph)	30		35			35	
Link Distance (ft)	835		2121			1598	
Travel Time (s)	19.0		41.3			31.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	149	183	758	137	136	739	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	332	0	895	0	136	739	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		0			12	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	16		16			16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	9		9	15		
Turn Type	Prot		NA		Prot	NA	
Protected Phases	4		2		1	1 2	3
Permitted Phases							
Detector Phase	4		2		1	1 2	
Switch Phase							
Minimum Initial (s)	9.0		15.0		5.0		1.0
Minimum Split (s)	22.0		20.9		9.0		21.0
Total Split (s)	34.0		55.0		9.0		21.0
Total Split (%)	28.6%		46.2%		7.6%		18%
Maximum Green (s)	30.0		49.1		5.0		17.0
Yellow Time (s)	3.0		4.0		3.0		4.0
All-Red Time (s)	1.0		1.9		1.0		0.0
Lost Time Adjust (s)	0.0		0.0		0.0		
Total Lost Time (s)	4.0		5.9		4.0		
Lead/Lag	Lag		Lag		Lead		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0		4.0		1.0		0.2
Recall Mode	None		Min		None		None
Walk Time (s)							7.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Flash Dont Walk (s)							10.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	19.2		49.3		5.0	60.3	
Actuated g/C Ratio	0.22		0.56		0.06	0.69	
v/c Ratio	0.81		0.87		1.35	0.58	
Control Delay	43.2		28.7		243.8	10.4	
Queue Delay	0.0		0.0		0.0	0.0	
Total Delay	43.2		28.7		243.8	10.4	
LOS	D		C		F	B	
Approach Delay	43.2		28.7			46.6	
Approach LOS	D		C			D	
Queue Length 50th (ft)	149		386		~98	180	
Queue Length 95th (ft)	243		#777		#233	373	
Internal Link Dist (ft)	755		2041			1518	
Turn Bay Length (ft)					160		
Base Capacity (vph)	613		1031		101	1282	
Starvation Cap Reductn	0		0		0	0	
Spillback Cap Reductn	0		0		0	0	
Storage Cap Reductn	0		0		0	0	
Reduced v/c Ratio	0.54		0.87		1.35	0.58	

Intersection Summary

Area Type: Other
Cycle Length: 119
Actuated Cycle Length: 87.5
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.35
Intersection Signal Delay: 38.4 — Intersection LOS: D
Intersection Capacity Utilization 80.7% — ICU Level of Service D
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Route 229 & West Washington Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	362	103	840	202	46	649
Future Volume (vph)	362	103	840	202	46	649
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	490	325		130	220	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	1583	3539	1583	1770	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		112		220		
Link Speed (mph)	30		30			30
Link Distance (ft)	911		424			459
Travel Time (s)	20.7		9.6			10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	393	112	913	220	50	705
Shared Lane Traffic (%)						
Lane Group Flow (vph)	393	112	913	220	50	705
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4	2	4	1	1 2
Permitted Phases				2		
Detector Phase	4	4	2	4	1	1 2
Switch Phase						
Minimum Initial (s)	6.0	6.0	15.0	6.0	6.0	
Minimum Split (s)	25.0	25.0	20.9	25.0	10.9	
Total Split (s)	30.0	30.0	55.0	30.0	15.0	
Total Split (%)	30.0%	30.0%	55.0%	30.0%	15.0%	
Maximum Green (s)	26.0	26.0	49.1	26.0	10.1	
Yellow Time (s)	3.0	3.0	4.9	3.0	3.3	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	5.9	4.0	4.9	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	3.0	2.0	3.0	
Recall Mode	None	None	C-Min	None	None	
Walk Time (s)	1.0	1.0		1.0		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Flash Dont Walk (s)	20.0	20.0		20.0		
Pedestrian Calls (#/hr)	0	0		0		
Act Effct Green (s)	16.0	16.0	55.8	77.7	13.4	75.1
Actuated g/C Ratio	0.16	0.16	0.56	0.78	0.13	0.75
v/c Ratio	0.72	0.32	0.46	0.17	0.21	0.27
Control Delay	47.2	9.3	10.8	0.7	40.0	4.5
Queue Delay	0.0	0.0	0.8	0.0	0.0	0.0
Total Delay	47.2	9.3	11.6	0.7	40.0	4.5
LOS	D	A	B	A	D	A
Approach Delay	38.8		9.5			6.8
Approach LOS	D		A			A
Queue Length 50th (ft)	124	0	102	2	29	60
Queue Length 95th (ft)	163	44	m300	m0	63	101
Internal Link Dist (ft)	831		344			379
Turn Bay Length (ft)	490	325		130	220	
Base Capacity (vph)	892	494	1975	1415	237	2625
Starvation Cap Reductn	0	0	700	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.23	0.72	0.16	0.21	0.27

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 85 (85%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 14.8 — Intersection LOS: B
Intersection Capacity Utilization 50.9% — ICU Level of Service A
Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Route 229 & Broad Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	524	319	26	656	154	297	640	16	197	438	376
Future Volume (vph)	244	524	319	26	656	154	297	640	16	197	438	376
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	525		765	65		300	525		0	200		275
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	150			135			90			75		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850			0.850		0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	1770	3539	1583	1770	3525	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1863	1583	1770	3539	1583	1770	3525	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			347			94		2				150
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		918			774			907			424	
Travel Time (s)		20.9			17.6			20.6			9.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	265	570	347	28	713	167	323	696	17	214	476	409
Shared Lane Traffic (%)												
Lane Group Flow (vph)	265	570	347	28	713	167	323	713	0	214	476	409
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA		Prot	NA	pt+ov
Protected Phases	7	4	4 1	3	8	5 8	1	6		5	2	2 7
Permitted Phases												
Detector Phase	7	4	4 1	3	8	5 8	1	6		5	2	2 7
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	15.0		6.0	15.0	
Minimum Split (s)	11.2	28.4		10.0	28.4		10.0	21.4		10.0	21.4	
Total Split (s)	18.0	25.0		18.0	25.0		34.0	23.0		34.0	23.0	
Total Split (%)	18.0%	25.0%		18.0%	25.0%		34.0%	23.0%		34.0%	23.0%	
Maximum Green (s)	12.8	19.6		14.0	19.6		30.0	16.6		30.0	16.6	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	4.9		3.0	4.9	
All-Red Time (s)	2.2	1.7		1.0	1.7		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.4		4.0	5.4		4.0	6.4		4.0	6.4	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		22.0			22.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		1.0			1.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	11.3	31.3	58.7	6.6	21.4	52.5	23.4	16.6		29.7	22.9	39.4
Actuated g/C Ratio	0.11	0.31	0.59	0.07	0.21	0.52	0.23	0.17		0.30	0.23	0.39
v/c Ratio	0.68	0.98	0.32	0.24	0.94	0.19	0.78	1.22		0.41	0.59	0.57
Control Delay	51.8	69.5	1.9	49.0	61.7	3.6	48.9	149.5		37.5	46.3	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5		0.0	0.0	0.4
Total Delay	51.8	69.5	1.9	49.0	61.7	3.6	48.9	150.0		37.5	46.3	25.7
LOS	D	E	A	D	E	A	D	F		D	D	C
Approach Delay		45.7			50.6			118.4			36.9	
Approach LOS		D			D			F			D	
Queue Length 50th (ft)	84	~417	0	17	240	11	193	~295		124	154	119
Queue Length 95th (ft)	125	#653	34	45	#373	28	268	#414		195	#234	278
Internal Link Dist (ft)		838			694			827			344	
Turn Bay Length (ft)	525		765	65		300	525			200		275
Base Capacity (vph)	439	582	1153	247	756	880	531	586		531	810	735
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	78
Spillback Cap Reductn	0	0	0	0	0	25	0	35		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.60	0.98	0.30	0.11	0.94	0.20	0.61	1.29		0.40	0.59	0.62

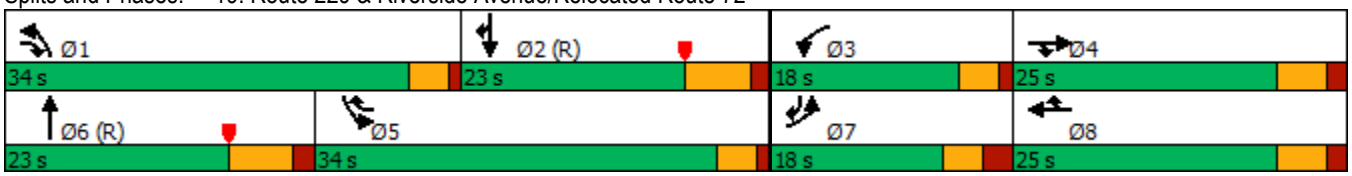
Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 42 (42%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.22
Intersection Signal Delay: 62.3 Intersection LOS: E
Intersection Capacity Utilization 78.2% ICU Level of Service D
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 19: Route 229 & Riverside Avenue/Relocated Route 72



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	443	226	156	717	115	440	770	220	112	593	78
Future Volume (vph)	66	443	226	156	717	115	440	770	220	112	593	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	240		240	400		0	145		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	150			150			70			90		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.949			0.979			0.967			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3359	0	1770	3465	0	1770	3422	0	1770	3479	0
Flt Permitted	0.185			0.186			0.342			0.342		
Satd. Flow (perm)	345	3359	0	346	3465	0	637	3422	0	637	3479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		57			11			28			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		669			802			666			907	
Travel Time (s)		15.2			18.2			15.1			20.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	482	246	170	779	125	478	837	239	122	645	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	728	0	170	904	0	478	1076	0	122	730	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		D.P+P	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1 2	2 5		1	5	
Permitted Phases	4			8			5			5		
Detector Phase	7	4		3	8		1 2	2 5		1	5	
Switch Phase												
Minimum Initial (s)	4.0	7.0		4.0	7.0					4.0	15.0	
Minimum Split (s)	8.2	13.0		8.0	13.0					8.0	22.3	
Total Split (s)	12.0	30.0		12.0	30.0					10.0	23.0	
Total Split (%)	8.8%	21.9%		8.8%	21.9%					7.3%	16.8%	
Maximum Green (s)	7.8	24.0		8.0	24.0					6.0	15.7	
Yellow Time (s)	3.2	3.8		3.0	3.8					3.0	4.9	
All-Red Time (s)	1.0	2.2		1.0	2.2					1.0	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)	4.2	6.0		4.0	6.0					4.0	7.3	
Lead/Lag	Lead	Lag		Lead	Lag					Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0					2.0	3.0	
Recall Mode	None	None		None	None					None	C-Min	
Walk Time (s)												

Lane Group	Ø2	Ø6
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	2	6
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	4.0	1.0
Minimum Split (s)	8.0	37.0
Total Split (s)	25.0	37.0
Total Split (%)	18%	27%
Maximum Green (s)	21.0	33.0
Yellow Time (s)	3.0	4.0
All-Red Time (s)	1.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	2.0	3.0
Recall Mode	Min	None
Walk Time (s)		7.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	50.9	41.8		61.1	50.2		55.7	44.0		30.7	15.7	
Actuated g/C Ratio	0.37	0.31		0.45	0.37		0.41	0.32		0.22	0.11	
v/c Ratio	0.35	0.68		0.57	0.71		0.85	0.96		0.51	1.80	
Control Delay	31.8	43.3		36.4	42.0		46.0	63.8		38.2	403.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	31.8	43.3		36.4	42.0		46.0	63.8		38.2	403.9	
LOS	C	D		D	D		D	E		D	F	
Approach Delay		42.3			41.2			58.3			351.6	
Approach LOS		D			D			E			F	
Queue Length 50th (ft)	36	277		89	362		295	485		59	~513	
Queue Length 95th (ft)	91	#507		#247	#715		#565	#632		#144	#644	
Internal Link Dist (ft)		589			722			586			827	
Turn Bay Length (ft)	200			240			400			145		
Base Capacity (vph)	213	1064		300	1277		562	1118		239	405	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.34	0.68		0.57	0.71		0.85	0.96		0.51	1.80	

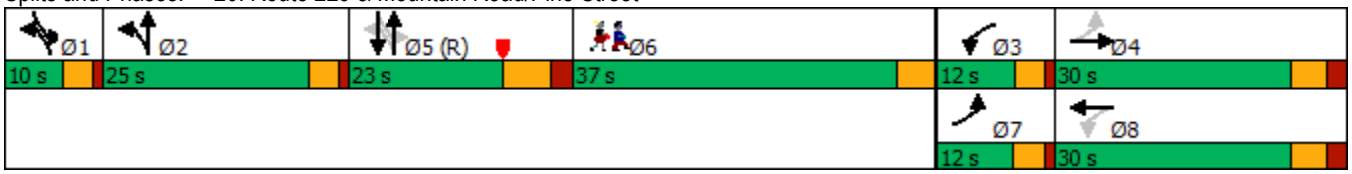
Intersection Summary

Area Type: Other
Cycle Length: 137
Actuated Cycle Length: 137
Offset: 52 (38%), Referenced to phase 5:NBSB, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.80
Intersection Signal Delay: 109.4 Intersection LOS: F
Intersection Capacity Utilization 89.1% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: Route 229 & Mountain Road/Pine Street



Lane Group	Ø2	Ø6
Flash Dont Walk (s)		26.0
Pedestrian Calls (#/hr)		5
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	218	8	20	10	8	4	33	1200	53	5	739	231
Future Volume (vph)	218	8	20	10	8	4	33	1200	53	5	739	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	130		0	70		0	55		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			25			50			70		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.975			0.954			0.994			0.964	
Flt Protected	0.950	0.963		0.950			0.950			0.950		
Satd. Flow (prot)	1681	1662	0	1770	1777	0	1770	3518	0	1770	3412	0
Flt Permitted	0.950	0.963		0.950			0.217			0.152		
Satd. Flow (perm)	1681	1662	0	1770	1777	0	404	3518	0	283	3412	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			4			3			26	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		650			212			757			666	
Travel Time (s)		14.8			4.8			17.2			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	237	9	22	11	9	4	36	1304	58	5	803	251
Shared Lane Traffic (%)	43%											
Lane Group Flow (vph)	135	133	0	11	13	0	36	1362	0	5	1054	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Split	NA		Split	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases							6			2		
Detector Phase	4	4		8	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	11.5	11.5		10.8	10.8		9.0	21.7		9.0	21.7	
Total Split (s)	30.0	30.0		30.0	30.0		15.0	55.0		15.0	55.0	
Total Split (%)	18.6%	18.6%		18.6%	18.6%		9.3%	34.2%		9.3%	34.2%	
Maximum Green (s)	24.5	24.5		25.2	25.2		11.0	48.3		11.0	48.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	4.9		3.0	4.9	
All-Red Time (s)	2.5	2.5		1.8	1.8		1.0	1.8		1.0	1.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		4.8	4.8		4.0	6.7		4.0	6.7	
Lead/Lag	Lag	Lag					Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)												

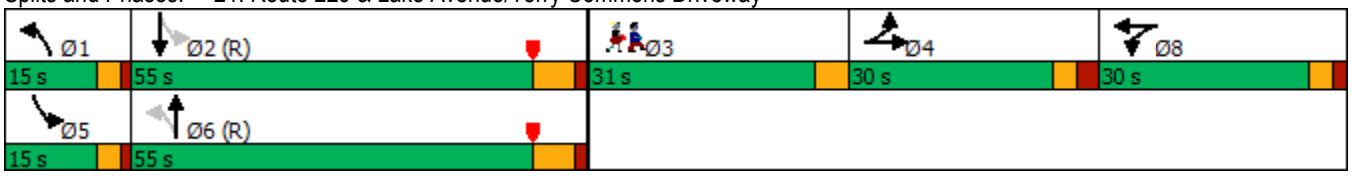
Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	19%
Maximum Green (s)	27.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	17.3	17.3		6.3	6.3		120.8	116.5		118.0	110.7	
Actuated g/C Ratio	0.11	0.11		0.04	0.04		0.75	0.72		0.73	0.69	
v/c Ratio	0.75	0.73		0.16	0.18		0.10	0.53		0.02	0.45	
Control Delay	93.8	88.6		79.9	64.0		10.7	16.0		12.4	16.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.4	
Total Delay	93.8	88.6		79.9	64.0		10.7	16.0		12.4	16.5	
LOS	F	F		E	E		B	B		B	B	
Approach Delay		91.2			71.3			15.9			16.5	
Approach LOS		F			E			B			B	
Queue Length 50th (ft)	147	140		11	9		8	277		1	235	
Queue Length 95th (ft)	221	213		35	35		38	781		10	543	
Internal Link Dist (ft)		570			132			677			586	
Turn Bay Length (ft)	200			130			70			55		
Base Capacity (vph)	255	257		277	281		397	2547		314	2353	
Starvation Cap Reductn	0	0		0	0		0	0		0	712	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.53	0.52		0.04	0.05		0.09	0.53		0.02	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 161
Actuated Cycle Length: 161
Offset: 42 (26%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 23.9 Intersection LOS: C
Intersection Capacity Utilization 58.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 21: Route 229 & Lake Avenue/Terry Commons Driveway



Lane Group	Ø3
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	19	31	30	9	120	54	1150	31	23	729	31
Future Volume (vph)	34	19	31	30	9	120	54	1150	31	23	729	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		175	60		0	180		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			75			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.950				0.850		0.996			0.994	
Flt Protected		0.980			0.963		0.950			0.950		
Satd. Flow (prot)	0	1734	0	0	1794	1583	1770	3525	0	1770	3518	0
Flt Permitted		0.850			0.669		0.275			0.148		
Satd. Flow (perm)	0	1504	0	0	1246	1583	512	3525	0	276	3518	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34				130		5			8	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		674			483			840			981	
Travel Time (s)		15.3			11.0			14.3			22.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	21	34	33	10	130	59	1250	34	25	792	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	92	0	0	43	130	59	1284	0	25	826	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		7			4 7		5	2		1	6	
Permitted Phases	7			4 7		4 7	2			6		
Detector Phase	7	7		4 7	4 7	4 7	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0					5.0	15.0		5.0	15.0	
Minimum Split (s)	10.8	10.8					9.0	21.1		9.0	21.1	
Total Split (s)	11.0	11.0					9.0	29.0		9.0	29.0	
Total Split (%)	18.3%	18.3%					15.0%	48.3%		15.0%	48.3%	
Maximum Green (s)	5.2	5.2					5.0	22.9		5.0	22.9	
Yellow Time (s)	3.0	3.0					3.0	4.2		3.0	4.2	
All-Red Time (s)	2.8	2.8					1.0	1.9		1.0	1.9	
Lost Time Adjust (s)		0.0					0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.8					4.0	6.1		4.0	6.1	
Lead/Lag	Lag	Lag					Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0					2.0	0.2		2.0	0.2	
Recall Mode	None	None					None	C-Max		None	C-Max	
Walk Time (s)	24.0	24.0										

Lane Group	Ø4
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	4
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	12.1
Total Split (s)	11.0
Total Split (%)	18%
Maximum Green (s)	5.9
Yellow Time (s)	3.0
All-Red Time (s)	2.1
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	1.0	1.0										
Pedestrian Calls (#/hr)	0	0										
Act Effct Green (s)		5.2			14.7	14.7	36.8	33.9		36.0	32.1	
Actuated g/C Ratio		0.09			0.24	0.24	0.61	0.56		0.60	0.54	
v/c Ratio		0.57			0.14	0.27	0.14	0.64		0.09	0.44	
Control Delay		35.0			17.5	5.4	4.9	11.7		6.6	13.1	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		35.0			17.5	5.4	4.9	11.7		6.6	13.1	
LOS		C			B	A	A	B		A	B	
Approach Delay		35.0			8.4			11.4			12.9	
Approach LOS		C			A			B			B	
Queue Length 50th (ft)		20			12	0	5	66		4	121	
Queue Length 95th (ft)		#75			32	33	m8	m#357		12	174	
Internal Link Dist (ft)		594			403			760			901	
Turn Bay Length (ft)						175	60			180		
Base Capacity (vph)		161			304	486	418	1995		290	1887	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.57			0.14	0.27	0.14	0.64		0.09	0.44	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 30 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 12.6 Intersection LOS: B
Intersection Capacity Utilization 61.6% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Route 229 & Battisto Road/Business Park Drive

Lane Group	Ø4
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

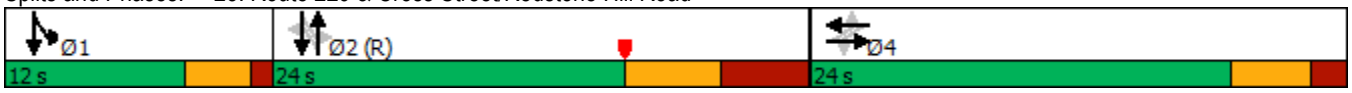
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	138	49	100	107	100	36	890	82	172	600	53
Future Volume (vph)	174	138	49	100	107	100	36	890	82	172	600	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	14	12
Storage Length (ft)	125		0	160		0	160		0	235		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			100			250		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.961			0.927			0.987			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1790	0	1770	1727	0	1770	3493	0	1770	3730	0
Flt Permitted	0.565			0.608			0.382			0.195		
Satd. Flow (perm)	1052	1790	0	1133	1727	0	712	3493	0	363	3730	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			82			15			24	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		744			601			1500			891	
Travel Time (s)		16.9			13.7			25.6			15.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	189	150	53	109	116	109	39	967	89	187	652	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	189	203	0	109	225	0	39	1056	0	187	710	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		12			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4			2			1 2		
Detector Phase	4	4		4	4		2	2		1	1 2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		5.0		
Minimum Split (s)	29.3	29.3		29.3	29.3		23.3	23.3		9.0		
Total Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		12.0		
Total Split (%)	40.0%	40.0%		40.0%	40.0%		40.0%	40.0%		20.0%		
Maximum Green (s)	18.7	18.7		18.7	18.7		15.7	15.7		8.0		
Yellow Time (s)	3.6	3.6		3.6	3.6		4.3	4.3		3.0		
All-Red Time (s)	1.7	1.7		1.7	1.7		4.0	4.0		1.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		
Total Lost Time (s)	5.3	5.3		5.3	5.3		8.3	8.3		4.0		
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		1.0		
Recall Mode	None	None		None	None		C-Max	C-Max		None		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	23.0	23.0		23.0	23.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	14.3	14.3		14.3	14.3		20.5	20.5		32.4	36.4	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.34	0.34		0.54	0.61	
v/c Ratio	0.76	0.45		0.41	0.48		0.16	0.88		0.50	0.31	
Control Delay	39.5	18.5		22.3	14.6		13.1	27.3		21.3	1.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	39.5	18.5		22.3	14.6		13.1	27.3		21.3	1.9	
LOS	D	B		C	B		B	C		C	A	
Approach Delay		28.6			17.1			26.8			5.9	
Approach LOS		C			B			C			A	
Queue Length 50th (ft)	62	51		32	42		7	222		22	11	
Queue Length 95th (ft)	#117	95		66	87		m14	#177		84	20	
Internal Link Dist (ft)		664			521			1420			811	
Turn Bay Length (ft)	125			160			160			235		
Base Capacity (vph)	327	579		353	594		243	1205		392	2213	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.58	0.35		0.31	0.38		0.16	0.88		0.48	0.32	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 54 (90%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 19.0 Intersection LOS: B
Intersection Capacity Utilization 77.2% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Route 229 & Cross Street/Redstone Hill Road

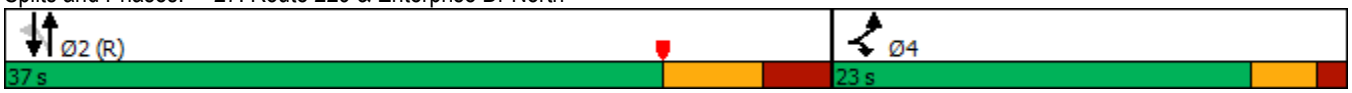


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	165	60	81	844	650	41
Future Volume (vph)	165	60	81	844	650	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12
Grade (%)	0%			6%	0%	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850			0.991	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1770	1794	0	3419	3507	0
Flt Permitted	0.950			0.802		
Satd. Flow (perm)	1770	1794	0	2753	3507	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		65			15	
Link Speed (mph)	30			40	40	
Link Distance (ft)	411			1591	1500	
Travel Time (s)	9.3			27.1	25.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	65	88	917	707	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	179	65	0	1005	752	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	0.85	1.04	1.04	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	Prot	Perm	NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases			2		2	
Detector Phase	4	4	2	2	2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	15.0	15.0	15.0	
Minimum Split (s)	20.4	20.4	22.6	22.6	22.6	
Total Split (s)	23.0	23.0	37.0	37.0	37.0	
Total Split (%)	38.3%	38.3%	61.7%	61.7%	61.7%	
Maximum Green (s)	18.6	18.6	29.4	29.4	29.4	
Yellow Time (s)	3.0	3.0	4.4	4.4	4.4	
All-Red Time (s)	1.4	1.4	3.2	3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.4	4.4		7.6	7.6	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	0.2	0.2	0.2	
Recall Mode	None	None	C-Min	C-Min	C-Min	
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	9.5	9.5		38.5	38.5	
Actuated g/C Ratio	0.16	0.16		0.64	0.64	
v/c Ratio	0.64	0.19		0.57	0.33	
Control Delay	33.4	7.5		5.8	3.6	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	33.4	7.5		5.8	3.6	
LOS	C	A		A	A	
Approach Delay	26.5			5.8	3.6	
Approach LOS	C			A	A	
Queue Length 50th (ft)	61	0		65	37	
Queue Length 95th (ft)	106	25		57	44	
Internal Link Dist (ft)	331			1511	1420	
Turn Bay Length (ft)						
Base Capacity (vph)	548	600		1764	2253	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.33	0.11		0.57	0.33	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 32 (53%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 7.5	Intersection LOS: A
Intersection Capacity Utilization 70.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 27: Route 229 & Enterprise Dr North



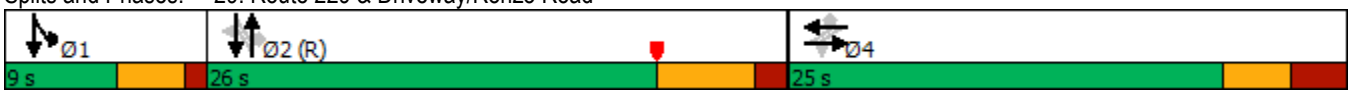
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	250	0	79	0	846	320	48	700	0
Future Volume (vph)	0	0	0	250	0	79	0	846	320	48	700	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			7%			6%	
Storage Length (ft)	0		0	0		300	280		130	165		165
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt						0.850			0.850			
Flt Protected					0.950					0.950		
Satd. Flow (prot)	0	1863	0	0	1770	1583	1798	3415	1528	1717	3433	0
Flt Permitted					0.757					0.204		
Satd. Flow (perm)	0	1863	0	0	1410	1583	1798	3415	1528	369	3433	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						125			348			
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		261			414			713			1591	
Travel Time (s)		5.9			9.4			12.2			27.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	272	0	86	0	920	348	52	761	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	272	86	0	920	348	52	761	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.05	1.05	1.05	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4		4	2		2	1 2		
Detector Phase	4	4		4	4	4	2	2	2	1	1 2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	15.0	15.0	15.0	5.0		
Minimum Split (s)	30.6	30.6		30.6	30.6	30.6	20.9	20.9	20.9	9.0		
Total Split (s)	25.0	25.0		25.0	25.0	25.0	26.0	26.0	26.0	9.0		
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	43.3%	43.3%	43.3%	15.0%		
Maximum Green (s)	19.4	19.4		19.4	19.4	19.4	20.1	20.1	20.1	5.0		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.4	4.4	4.4	3.0		
All-Red Time (s)	2.6	2.6		2.6	2.6	2.6	1.5	1.5	1.5	1.0		
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		5.6			5.6	5.6	5.9	5.9	5.9	4.0		
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	0.2	0.2	0.2	1.0		
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	24.0	24.0		24.0	24.0	24.0						
Flash Dont Walk (s)	1.0	1.0		1.0	1.0	1.0						
Pedestrian Calls (#/hr)	0	0		0	0	0						
Act Effct Green (s)					14.5	14.5		22.8	22.8	31.9	35.9	
Actuated g/C Ratio					0.24	0.24		0.38	0.38	0.53	0.60	
v/c Ratio					0.80	0.18		0.71	0.44	0.15	0.37	
Control Delay					38.2	2.6		16.2	5.6	4.8	5.8	
Queue Delay					0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay					38.2	2.6		16.2	5.6	4.8	5.8	
LOS					D	A		B	A	A	A	
Approach Delay					29.7			13.3			5.7	
Approach LOS					C			B			A	
Queue Length 50th (ft)					91	0		56	1	7	55	
Queue Length 95th (ft)					151	15		#158	75	5	18	
Internal Link Dist (ft)		181			334			633			1511	
Turn Bay Length (ft)						300			130	165		
Base Capacity (vph)					455	596		1299	797	357	2052	
Starvation Cap Reductn					0	0		0	0	0	0	
Spillback Cap Reductn					0	0		0	0	0	0	
Storage Cap Reductn					0	0		0	0	0	0	
Reduced v/c Ratio					0.60	0.14		0.71	0.44	0.15	0.37	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 58 (97%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 13.2 Intersection LOS: B
Intersection Capacity Utilization 58.6% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 29: Route 229 & Driveway/Ronzo Road

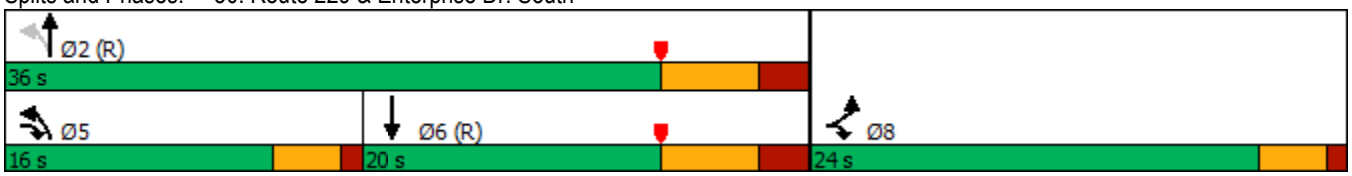


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	26	88	100	1140	840	33
Future Volume (vph)	26	88	100	1140	840	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			7%	7%	
Storage Length (ft)	0	0	745			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.994	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1708	3415	3395	0
Flt Permitted	0.950		0.238			
Satd. Flow (perm)	1770	1583	428	3415	3395	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		3			6	
Link Speed (mph)	30			40	40	
Link Distance (ft)	703			1424	713	
Travel Time (s)	16.0			24.3	12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	96	109	1239	913	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	28	96	109	1239	949	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.05	1.05	1.05	1.05
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	pt+ov	pm+pt	NA	NA	
Protected Phases	8	8 5	5	2	6	
Permitted Phases			2			
Detector Phase	8	8 5	5	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	24.0		9.0	21.7	21.7	
Total Split (s)	24.0		16.0	36.0	20.0	
Total Split (%)	40.0%		26.7%	60.0%	33.3%	
Maximum Green (s)	20.0		12.0	29.3	13.3	
Yellow Time (s)	3.0		3.0	4.4	4.4	
All-Red Time (s)	1.0		1.0	2.3	2.3	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0		4.0	6.7	6.7	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	C-Min	C-Min	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Walk Time (s)	19.0					
Flash Dont Walk (s)	1.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	8.1	16.9	45.8	44.4	35.7	
Actuated g/C Ratio	0.14	0.28	0.76	0.74	0.60	
v/c Ratio	0.12	0.21	0.23	0.49	0.47	
Control Delay	22.8	14.9	2.5	1.9	4.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	22.8	14.9	2.5	1.9	4.3	
LOS	C	B	A	A	A	
Approach Delay	16.7			2.0	4.3	
Approach LOS	B			A	A	
Queue Length 50th (ft)	9	24	1	5	55	
Queue Length 95th (ft)	27	48	m3	48	91	
Internal Link Dist (ft)	623			1344	633	
Turn Bay Length (ft)			745			
Base Capacity (vph)	590	630	582	2528	2020	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.05	0.15	0.19	0.49	0.47	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 3.6	Intersection LOS: A
Intersection Capacity Utilization 46.2%	ICU Level of Service A
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 30: Route 229 & Enterprise Dr. South



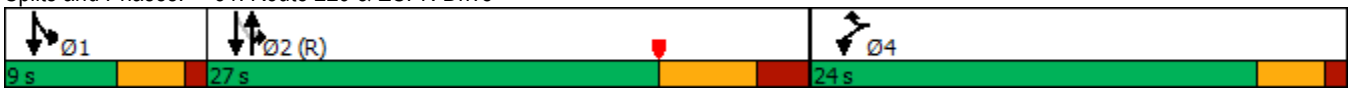
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	82	120	1120	30	23	960
Future Volume (vph)	82	120	1120	30	23	960
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			7%
Storage Length (ft)	0	0		105	95	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3539	1583	1708	3415
Flt Permitted	0.950				0.152	
Satd. Flow (perm)	1770	1583	3539	1583	273	3415
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		130		24		
Link Speed (mph)	30		40			40
Link Distance (ft)	370		539			1424
Travel Time (s)	8.4		9.2			24.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	130	1217	33	25	1043
Shared Lane Traffic (%)						
Lane Group Flow (vph)	89	130	1217	33	25	1043
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.05	1.05
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Prot	NA	Prot	pm+pt	NA
Protected Phases	4	4	2	2	1	1 2
Permitted Phases					1 2	
Detector Phase	4	4	2	2	1	1 2
Switch Phase						
Minimum Initial (s)	5.0	5.0	14.0	14.0	4.0	
Minimum Split (s)	22.1	22.1	20.8	20.8	8.0	
Total Split (s)	24.0	24.0	27.0	27.0	9.0	
Total Split (%)	40.0%	40.0%	45.0%	45.0%	15.0%	
Maximum Green (s)	19.9	19.9	20.2	20.2	5.0	
Yellow Time (s)	3.0	3.0	4.4	4.4	3.0	
All-Red Time (s)	1.1	1.1	2.4	2.4	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.1	4.1	6.8	6.8	4.0	
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	5.0	5.0	2.0	
Recall Mode	None	None	C-Min	C-Min	None	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Walk Time (s)	17.0	17.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	7.6	7.6	27.2	27.2	42.2	47.0
Actuated g/C Ratio	0.13	0.13	0.45	0.45	0.70	0.78
v/c Ratio	0.40	0.42	0.76	0.05	0.05	0.39
Control Delay	28.8	9.5	19.4	4.7	1.7	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.8	9.5	19.4	4.7	1.7	1.1
LOS	C	A	B	A	A	A
Approach Delay	17.3		19.0			1.1
Approach LOS	B		B			A
Queue Length 50th (ft)	30	0	245	2	0	10
Queue Length 95th (ft)	63	39	#395	m10	m2	20
Internal Link Dist (ft)	290		459			1344
Turn Bay Length (ft)				105	95	
Base Capacity (vph)	587	611	1603	729	483	2672
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.21	0.76	0.05	0.05	0.39

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 30 (50%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 11.3	Intersection LOS: B
Intersection Capacity Utilization 47.5%	ICU Level of Service A
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 31: Route 229 & ESPN Drive



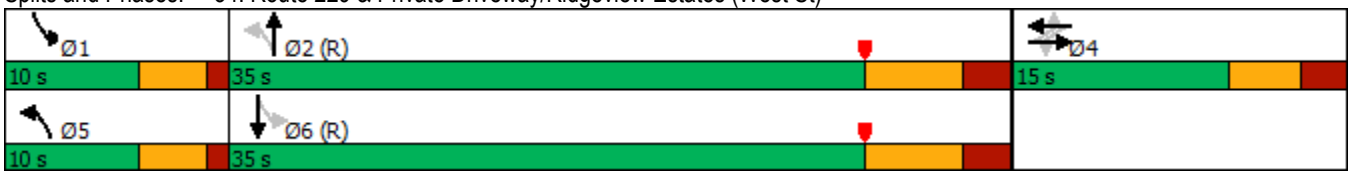
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	0	4	18	0	4	37	1130	24	28	980	30
Future Volume (vph)	20	0	4	18	0	4	37	1130	24	28	980	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		50	0		120	120		0	135		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	25			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.850			0.850			0.997			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1583	0	1770	3529	0	1770	1853	0
Flt Permitted	0.833			0.833			0.108			0.183		
Satd. Flow (perm)	1552	1583	0	1552	1583	0	201	3529	0	341	1853	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		234			217			5			4	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		299			498			1447			922	
Travel Time (s)		6.8			11.3			24.7			15.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	0	4	20	0	4	40	1228	26	30	1065	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	4	0	20	4	0	40	1254	0	30	1098	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Left
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4			2			6		
Detector Phase	4	4		4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	13.4	13.4		13.4	13.4		9.0	21.6		9.0	21.6	
Total Split (s)	15.0	15.0		15.0	15.0		10.0	35.0		10.0	35.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		16.7%	58.3%		16.7%	58.3%	
Maximum Green (s)	9.6	9.6		9.6	9.6		6.0	28.4		6.0	28.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.1	2.1		2.1	2.1		1.0	2.2		1.0	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	5.4		5.4	5.4		4.0	6.6		4.0	6.6	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	0.2		1.5	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	8.0	8.0		8.0	8.0		46.4	44.4		46.4	44.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.77	0.74		0.77	0.74	
v/c Ratio	0.11	0.01		0.10	0.01		0.14	0.48		0.08	0.80	
Control Delay	24.4	0.0		24.2	0.0		2.2	3.0		1.5	19.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	24.4	0.0		24.2	0.0		2.2	3.0		1.5	19.0	
LOS	C	A		C	A		A	A		A	B	
Approach Delay		20.6			20.1			3.0			18.5	
Approach LOS		C			C			A			B	
Queue Length 50th (ft)	7	0		6	0		3	47		1	429	
Queue Length 95th (ft)	25	0		23	0		m4	m57		m2	#738	
Internal Link Dist (ft)		219			418			1367			842	
Turn Bay Length (ft)	50						120			135		
Base Capacity (vph)	248	449		248	435		313	2612		408	1372	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.01		0.08	0.01		0.13	0.48		0.07	0.80	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 59 (98%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 10.4 Intersection LOS: B
Intersection Capacity Utilization 71.2% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 34: Route 229 & Private Driveway/Ridgeview Estates (West St)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	157	6	115	86	116	73	60	960	170	129	850	12
Future Volume (vph)	157	6	115	86	116	73	60	960	170	129	850	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	80		0	125		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.944			0.942			0.977			0.998	
Flt Protected		0.973		0.950			0.950			0.950		
Satd. Flow (prot)	0	1711	0	1770	1755	0	1770	3458	0	1770	1859	0
Flt Permitted		0.698		0.585			0.137			0.142		
Satd. Flow (perm)	0	1227	0	1090	1755	0	255	3458	0	265	1859	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49			44			45			2	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		906			1161			1141			1447	
Travel Time (s)		20.6			26.4			19.4			24.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	171	7	125	93	126	79	65	1043	185	140	924	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	303	0	93	205	0	65	1228	0	140	937	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Detector Phase	4	4		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	25.4	25.4		25.4	25.4		9.0	22.1		9.0	22.1	
Total Split (s)	15.0	15.0		15.0	15.0		11.0	35.0		10.0	34.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		18.3%	58.3%		16.7%	56.7%	
Maximum Green (s)	8.6	8.6		8.6	8.6		7.0	27.9		6.0	26.9	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	2.7		1.0	2.7	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.4		6.4	6.4		4.0	7.1		4.0	7.1	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	0.2		2.0	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	18.0	18.0		18.0	18.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		8.6		8.6	8.6		37.5	30.0		38.8	32.1	
Actuated g/C Ratio		0.14		0.14	0.14		0.62	0.50		0.65	0.54	
v/c Ratio		1.40		0.60	0.71		0.22	0.70		0.45	0.94	
Control Delay		227.6		43.0	35.2		5.3	13.7		10.2	29.5	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		227.6		43.0	35.2		5.3	13.7		10.2	29.5	
LOS		F		D	D		A	B		B	C	
Approach Delay		227.6			37.7			13.2			27.0	
Approach LOS		F			D			B			C	
Queue Length 50th (ft)		~136		32	56		6	105		10	~403	
Queue Length 95th (ft)		#273		#90	#144		m11	172		m16	m#608	
Internal Link Dist (ft)		826			1081			1061			1367	
Turn Bay Length (ft)							80			125		
Base Capacity (vph)		217		156	289		341	1751		321	996	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		1.40		0.60	0.71		0.19	0.70		0.44	0.94	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 33 (55%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.40
Intersection Signal Delay: 42.5 Intersection LOS: D
Intersection Capacity Utilization 96.2% ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 35: Route 229 & West Queen Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	30	60	100	1160	950	110
Future Volume (vph)	30	60	100	1160	950	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt		0.850			0.986	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1770	1583	0	3525	1837	0
Flt Permitted	0.950			0.568		
Satd. Flow (perm)	1770	1583	0	2010	1837	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		65			14	
Link Speed (mph)	30			40	40	
Link Distance (ft)	745			2535	1141	
Travel Time (s)	16.9			43.2	19.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	65	109	1261	1033	120
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	65	0	1370	1153	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	Perm	D.P+P	NA	NA	
Protected Phases	4		1	1 2	2	
Permitted Phases		4	2			
Detector Phase	4	4	1	1 2	2	
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		15.0	
Minimum Split (s)	30.0	30.0	8.0		24.8	
Total Split (s)	15.0	15.0	8.0		37.0	
Total Split (%)	25.0%	25.0%	13.3%		61.7%	
Maximum Green (s)	11.0	11.0	4.0		30.2	
Yellow Time (s)	3.0	3.0	3.0		4.4	
All-Red Time (s)	1.0	1.0	1.0		2.4	
Lost Time Adjust (s)	0.0	0.0			0.0	
Total Lost Time (s)	4.0	4.0			6.8	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	None	None	Max		C-Max	
Walk Time (s)	15.0	15.0				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	7.4	7.4		45.0	30.2	
Actuated g/C Ratio	0.12	0.12		0.75	0.50	
v/c Ratio	0.15	0.26		0.76	1.24	
Control Delay	25.0	10.3		9.1	129.9	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	25.0	10.3		9.1	129.9	
LOS	C	B		A	F	
Approach Delay	15.2			9.1	129.9	
Approach LOS	B			A	F	
Queue Length 50th (ft)	11	0		74	~517	
Queue Length 95th (ft)	32	29		#166	m#552	
Internal Link Dist (ft)	665			2455	1061	
Turn Bay Length (ft)		100				
Base Capacity (vph)	324	343		1812	931	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.10	0.19		0.76	1.24	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 34 (57%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.24
Intersection Signal Delay: 62.5 Intersection LOS: E
Intersection Capacity Utilization 109.8% ICU Level of Service H
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 36: Route 229 & Welch Road

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	42	58	1200	50	133	880
Future Volume (vph)	42	58	1200	50	133	880
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		7%			0%
Storage Length (ft)	0	95		0	205	
Storage Lanes	1	1		0	1	
Taper Length (ft)	100				180	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt		0.850	0.994			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3395	0	1770	1863
Flt Permitted	0.950				0.159	
Satd. Flow (perm)	1770	1583	3395	0	296	1863
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		63	7			
Link Speed (mph)	30		40			40
Link Distance (ft)	911		3080			2535
Travel Time (s)	20.7		52.5			43.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	63	1304	54	145	957
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	63	1358	0	145	957
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.05	1.05	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	4		2		1	1 2
Permitted Phases		4			1 2	
Detector Phase	4	4	2		1	1 2
Switch Phase						
Minimum Initial (s)	9.0	9.0	25.0		5.0	
Minimum Split (s)	20.0	20.0	32.6		9.0	
Total Split (s)	24.0	24.0	77.6		13.0	
Total Split (%)	20.9%	20.9%	67.7%		11.3%	
Maximum Green (s)	20.0	20.0	70.0		9.0	
Yellow Time (s)	3.0	3.0	4.9		3.0	
All-Red Time (s)	1.0	1.0	2.7		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0	7.6		4.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	4.0		2.0	
Recall Mode	None	None	Min		Min	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	9.8	9.8	64.7		77.6	83.0
Actuated g/C Ratio	0.10	0.10	0.67		0.81	0.87
v/c Ratio	0.26	0.29	0.59		0.38	0.59
Control Delay	48.0	15.2	10.1		4.8	4.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	48.0	15.2	10.1		4.8	4.6
LOS	D	B	B		A	A
Approach Delay	29.1		10.1			4.6
Approach LOS	C		B			A
Queue Length 50th (ft)	29	0	227		12	151
Queue Length 95th (ft)	65	40	304		25	260
Internal Link Dist (ft)	831		3000			2455
Turn Bay Length (ft)		95			205	
Base Capacity (vph)	384	392	2506		384	1612
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.12	0.16	0.54		0.38	0.59

Intersection Summary	
Area Type: Other	
Cycle Length: 114.6	
Actuated Cycle Length: 95.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 8.5	Intersection LOS: A
Intersection Capacity Utilization 62.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 38: Route 229 & Spring Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	97	74	1175	110	109	810
Future Volume (vph)	97	74	1175	110	109	810
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	12	12	12	12
Grade (%)	0%		0%			7%
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.942		0.987			
Flt Protected	0.972					0.994
Satd. Flow (prot)	1819	0	3493	0	0	1787
Flt Permitted	0.972					0.630
Satd. Flow (perm)	1819	0	3493	0	0	1132
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	54		23			
Link Speed (mph)	30		40			40
Link Distance (ft)	335		424			3080
Travel Time (s)	7.6		7.2			52.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	80	1277	120	118	880
Shared Lane Traffic (%)						
Lane Group Flow (vph)	185	0	1397	0	0	998
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	14		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.92	0.92	1.00	1.00	1.05	1.05
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot		NA		Perm	NA
Protected Phases	4		2			2
Permitted Phases					2	
Detector Phase	4		2		2	2
Switch Phase						
Minimum Initial (s)	9.0		15.0		15.0	15.0
Minimum Split (s)	23.0		21.3		21.3	21.3
Total Split (s)	24.0		46.3		46.3	46.3
Total Split (%)	34.1%		65.9%		65.9%	65.9%
Maximum Green (s)	20.0		40.0		40.0	40.0
Yellow Time (s)	3.0		4.6		4.6	4.6
All-Red Time (s)	1.0		1.7		1.7	1.7
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	4.0		6.3			6.3
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.5		2.5		2.5	2.5
Recall Mode	None		Min		Min	Min
Walk Time (s)	18.0					
Flash Dont Walk (s)	1.0					

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	10.1		42.9			42.9
Actuated g/C Ratio	0.16		0.68			0.68
v/c Ratio	0.55		0.59			1.30
Control Delay	23.1		6.9			163.3
Queue Delay	0.0		0.4			0.0
Total Delay	23.1		7.3			163.3
LOS	C		A			F
Approach Delay	23.1		7.3			163.3
Approach LOS	C		A			F
Queue Length 50th (ft)	43		111			~474
Queue Length 95th (ft)	96		198			#735
Internal Link Dist (ft)	255		344			3000
Turn Bay Length (ft)						
Base Capacity (vph)	616		2372			766
Starvation Cap Reductn	0		432			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.30		0.72			1.30

Intersection Summary	
Area Type: Other	
Cycle Length: 70.3	
Actuated Cycle Length: 63.3	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.30	
Intersection Signal Delay: 68.8	Intersection LOS: E
Intersection Capacity Utilization 108.4%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 41: Route 229 & Curtiss Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	2	23	21	0	11	50	1250	20	15	860	55
Future Volume (vph)	25	2	23	21	0	11	50	1250	20	15	860	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	65		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.937			0.954			0.998			0.991	
Flt Protected		0.976			0.968		0.950			0.950		
Satd. Flow (prot)	0	1704	0	0	1720	0	1770	3532	0	1770	1846	0
Flt Permitted		0.824			0.769		0.197			0.171		
Satd. Flow (perm)	0	1438	0	0	1367	0	367	3532	0	319	1846	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			58			4			8	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		287			281			412			424	
Travel Time (s)		6.5			6.4			7.0			7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	2	25	23	0	12	54	1359	22	16	935	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	35	0	54	1381	0	16	995	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			15	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	17.5	17.5		17.5	17.5		21.4	21.4		21.4	21.4	
Total Split (s)	22.0	22.0		22.0	22.0		42.4	42.4		42.4	42.4	
Total Split (%)	34.2%	34.2%		34.2%	34.2%		65.8%	65.8%		65.8%	65.8%	
Maximum Green (s)	17.5	17.5		17.5	17.5		36.0	36.0		36.0	36.0	
Yellow Time (s)	3.4	3.4		3.4	3.4		4.9	4.9		4.9	4.9	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		6.4	6.4		6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Recall Mode	C-Min	C-Min		C-Min	C-Min		Max	Max		Max	Max	
Walk Time (s)	12.0	12.0		12.0	12.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		7.3			7.3		46.2	46.2		46.2	46.2	
Actuated g/C Ratio		0.11			0.11		0.72	0.72		0.72	0.72	
v/c Ratio		0.29			0.17		0.21	0.55		0.07	0.75	
Control Delay		21.0			6.1		5.4	5.3		3.7	10.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	3.7	
Total Delay		21.0			6.1		5.4	5.3		3.7	14.0	
LOS		C			A		A	A		A	B	
Approach Delay		21.0			6.1			5.3			13.9	
Approach LOS		C			A			A			B	
Queue Length 50th (ft)		11			0		5	98		1	177	
Queue Length 95th (ft)		39			14		19	153		7	357	
Internal Link Dist (ft)		207			201			332			344	
Turn Bay Length (ft)							100			65		
Base Capacity (vph)		408			413		262	2533		228	1326	
Starvation Cap Reductn		0			0		0	0		0	241	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.13			0.08		0.21	0.55		0.07	0.92	

Intersection Summary

Area Type:	Other
Cycle Length: 64.4	
Actuated Cycle Length: 64.4	
Offset: 49 (76%), Referenced to phase 4:EBWB, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 9.0	Intersection LOS: A
Intersection Capacity Utilization 63.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 42: Route 229 & Corporate Drive/Centrion Plaza Drive

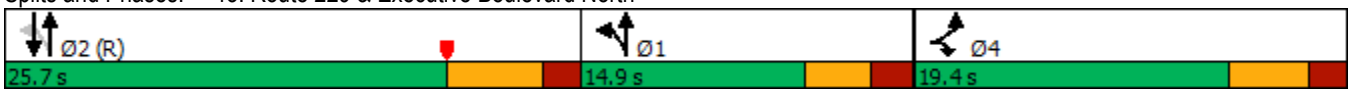
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	60	78	20	1260	890	11
Future Volume (vph)	60	78	20	1260	890	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	360	220			240
Storage Lanes	1	1	1			1
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.998	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3532	0
Flt Permitted	0.950		0.218			
Satd. Flow (perm)	1770	1583	406	3539	3532	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		85			2	
Link Speed (mph)	30			40	40	
Link Distance (ft)	694			570	291	
Travel Time (s)	15.8			9.7	5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	85	22	1370	967	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	65	85	22	1370	979	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	8	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	Prot	pm+pt	NA	NA	
Protected Phases	4	4	1	1 2	2	
Permitted Phases			1 2			
Detector Phase	4	4	1	1 2	2	
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		15.0	
Minimum Split (s)	12.4	12.4	8.9		21.0	
Total Split (s)	19.4	19.4	14.9		25.7	
Total Split (%)	32.3%	32.3%	24.8%		42.8%	
Maximum Green (s)	14.0	14.0	10.0		19.7	
Yellow Time (s)	3.6	3.6	3.0		4.3	
All-Red Time (s)	1.8	1.8	1.9		1.7	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.4	5.4	4.9		6.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.5	2.5	2.0		0.2	
Recall Mode	None	None	None		C-Max	
Walk Time (s)	24.0	24.0				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	7.8	7.8	39.5	45.4	28.7	
Actuated g/C Ratio	0.13	0.13	0.66	0.76	0.48	
v/c Ratio	0.28	0.30	0.05	0.51	0.58	
Control Delay	26.5	9.5	3.9	5.0	14.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	26.5	9.5	3.9	5.0	14.4	
LOS	C	A	A	A	B	
Approach Delay	16.9			5.0	14.4	
Approach LOS	B			A	B	
Queue Length 50th (ft)	22	0	2	93	135	
Queue Length 95th (ft)	51	32	8	159	209	
Internal Link Dist (ft)	614			490	211	
Turn Bay Length (ft)		360	220			
Base Capacity (vph)	413	434	496	2636	1690	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.16	0.20	0.04	0.52	0.58	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 59 (98%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 9.3 — Intersection LOS: A
Intersection Capacity Utilization 49.2% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 43: Route 229 & Executive Boulevard North



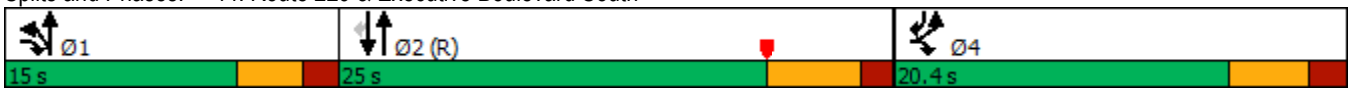
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	160	480	220	1120	850	122
Future Volume (vph)	160	480	220	1120	850	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			5%	0%	
Storage Length (ft)	860	370	335			250
Storage Lanes	1	1	2			1
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	0.88	0.97	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	2787	3347	3451	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	2787	3347	3451	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		37				133
Link Speed (mph)	30			40	40	
Link Distance (ft)	945			579	570	
Travel Time (s)	21.5			9.9	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	522	239	1217	924	133
Shared Lane Traffic (%)						
Lane Group Flow (vph)	174	522	239	1217	924	133
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			24	20	
Link Offset(ft)	0			0	-4	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	pt+ov	Prot	NA	NA	pm+ov
Protected Phases	4	1 4	1	1 2	2	4
Permitted Phases		1 4				2
Detector Phase	4	1 4	1	1 2	2	4
Switch Phase						
Minimum Initial (s)	7.0		4.0		15.0	7.0
Minimum Split (s)	12.4		8.6		20.8	12.4
Total Split (s)	20.4		15.0		25.0	20.4
Total Split (%)	33.8%		24.8%		41.4%	33.8%
Maximum Green (s)	15.0		10.4		19.2	15.0
Yellow Time (s)	3.6		3.0		4.3	3.6
All-Red Time (s)	1.8		1.6		1.5	1.8
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.4		4.6		5.8	5.4
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.5		2.0		0.2	2.5
Recall Mode	None		None		C-Max	None

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Walk Time (s)	22.0					22.0
Flash Dont Walk (s)	1.0					1.0
Pedestrian Calls (#/hr)	0					0
Act Effct Green (s)	11.9	30.1	12.9	38.5	19.9	37.5
Actuated g/C Ratio	0.20	0.50	0.21	0.64	0.33	0.62
v/c Ratio	0.50	0.37	0.34	0.55	0.79	0.13
Control Delay	26.2	9.3	22.3	7.8	25.4	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.2	9.3	22.3	7.8	25.4	1.2
LOS	C	A	C	A	C	A
Approach Delay	13.5			10.2	22.3	
Approach LOS	B			B	C	
Queue Length 50th (ft)	57	55	38	112	161	0
Queue Length 95th (ft)	102	86	70	183	#254	13
Internal Link Dist (ft)	865			499	490	
Turn Bay Length (ft)	860	370	335			250
Base Capacity (vph)	439	1361	712	2200	1163	1109
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.38	0.34	0.55	0.79	0.12

Intersection Summary	
Area Type: Other	
Cycle Length: 60.4	
Actuated Cycle Length: 60.4	
Offset: 21 (35%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 14.9	Intersection LOS: B
Intersection Capacity Utilization 51.8%	ICU Level of Service A
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 44: Route 229 & Executive Boulevard South



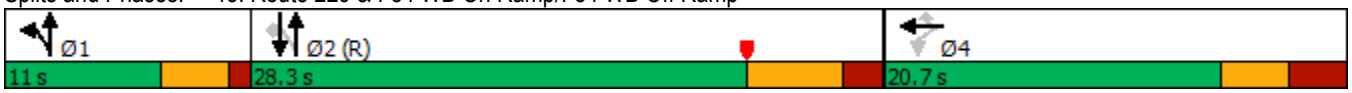
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	430	0	340	66	1000	0	0	630	700
Future Volume (vph)	0	0	0	430	0	340	66	1000	0	0	630	700
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			5%	
Storage Length (ft)	0		0	240		440	90		0	0		250
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			100			100			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950	0.950		0.950					
Satd. Flow (prot)	0	0	0	1681	1681	1583	1770	3539	0	0	3451	1544
Flt Permitted				0.950	0.950		0.339					
Satd. Flow (perm)	0	0	0	1681	1681	1583	631	3539	0	0	3451	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						131						761
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		337			747			508			579	
Travel Time (s)		7.7			17.0			8.7			9.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	467	0	370	72	1087	0	0	685	761
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	0	0	233	234	370	72	1087	0	0	685	761
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			18			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					4		1	1 2			2	
Permitted Phases				4		4	1 2					2
Detector Phase				4	4	4	1	1 2			2	2
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0	5.0				15.0	15.0
Minimum Split (s)				12.7	12.7	12.7	9.0				21.2	21.2
Total Split (s)				20.7	20.7	20.7	11.0				28.3	28.3
Total Split (%)				34.5%	34.5%	34.5%	18.3%				47.2%	47.2%
Maximum Green (s)				15.0	15.0	15.0	7.0				22.1	22.1
Yellow Time (s)				3.0	3.0	3.0	3.0				4.3	4.3
All-Red Time (s)				2.7	2.7	2.7	1.0				1.9	1.9
Lost Time Adjust (s)				0.0	0.0	0.0	0.0				0.0	0.0
Total Lost Time (s)				5.7	5.7	5.7	4.0				6.2	6.2
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)				2.0	2.0	2.0	2.0				0.2	0.2
Recall Mode				None	None	None	None				C-Max	C-Max

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)				13.0	13.0	13.0	33.3	37.3			23.0	23.0
Actuated g/C Ratio				0.22	0.22	0.22	0.56	0.62			0.38	0.38
v/c Ratio				0.64	0.64	0.83	0.14	0.49			0.52	0.72
Control Delay				29.5	29.7	31.9	6.1	7.6			16.3	5.9
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				29.5	29.7	31.9	6.1	7.6			16.3	5.9
LOS				C	C	C	A	A			B	A
Approach Delay					30.6			7.5			10.8	
Approach LOS					C			A			B	
Queue Length 50th (ft)				76	77	77	10	107			99	0
Queue Length 95th (ft)				142	143	#200	23	150			145	63
Internal Link Dist (ft)		257			667			428			499	
Turn Bay Length (ft)				240		440	90					250
Base Capacity (vph)				420	420	494	504	2202			1324	1061
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.55	0.56	0.75	0.14	0.49			0.52	0.72

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 20 (33%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 14.5 Intersection LOS: B
Intersection Capacity Utilization 72.7% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 45: Route 229 & I-84 WB On Ramp/I-84 WB Off Ramp



Appendix C Synchro Capacity Analysis

MD Synchro Report

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	670	30	237	652	1	252	0	232	1	19	4
Future Volume (vph)	0	670	30	237	652	1	252	0	232	1	19	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		150	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.993							0.850		0.979	
Flt Protected					0.987		0.950	0.950			0.998	
Satd. Flow (prot)	0	3514	0	0	3493	0	1681	1681	1583	0	1820	0
Flt Permitted					0.598		0.950	0.950			0.998	
Satd. Flow (perm)	0	3514	0	0	2116	0	1681	1681	1583	0	1820	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6							224		4	
Link Speed (mph)		35			35			35			30	
Link Distance (ft)		363			299			709			169	
Travel Time (s)		7.1			5.8			13.8			3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	728	33	258	709	1	274	0	252	1	21	4
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	761	0	0	968	0	137	137	252	0	26	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			20	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		D.P+P	NA		Split	NA	pm+ov	Split	NA	
Protected Phases		2		1	1 2		5	5	1	4	4	
Permitted Phases	2			2					5			
Detector Phase	2	2		1	1 2		5	5	1	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		7.0			9.0	9.0	7.0	5.0	5.0	
Minimum Split (s)	22.4	22.4		11.0			13.0	13.0	11.0	24.3	24.3	
Total Split (s)	54.0	54.0		10.0			25.0	25.0	10.0	11.0	11.0	
Total Split (%)	54.0%	54.0%		10.0%			25.0%	25.0%	10.0%	11.0%	11.0%	
Maximum Green (s)	46.6	46.6		6.0			21.0	21.0	6.0	4.7	4.7	
Yellow Time (s)	4.4	4.4		3.0			3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		1.0			1.0	1.0	1.0	3.3	3.3	
Lost Time Adjust (s)		0.0					0.0	0.0	0.0		0.0	
Total Lost Time (s)		7.4					4.0	4.0	4.0		6.3	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2		0.2			3.0	3.0	0.2	1.5	1.5	
Recall Mode	C-Max	C-Max		Min			Min	Min	Min	None	None	
Walk Time (s)										17.0	17.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)										1.0	1.0	
Pedestrian Calls (#/hr)										0	0	
Act Effct Green (s)		54.5			67.0		13.6	13.6	24.3		5.6	
Actuated g/C Ratio		0.54			0.67		0.14	0.14	0.24		0.06	
v/c Ratio		0.40			0.63		0.60	0.60	0.45		0.25	
Control Delay		15.6			11.2		51.2	51.2	6.7		45.4	
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0	
Total Delay		15.6			11.2		51.2	51.2	6.7		45.4	
LOS		B			B		D	D	A		D	
Approach Delay		15.6			11.2			29.9			45.4	
Approach LOS		B			B			C			D	
Queue Length 50th (ft)		166			131		88	88	10		14	
Queue Length 95th (ft)		217			212		145	145	57		40	
Internal Link Dist (ft)		283			219			629			89	
Turn Bay Length (ft)							150		150			
Base Capacity (vph)		1917			1543		353	353	554		106	
Starvation Cap Reductn		0			0		0	0	0		0	
Spillback Cap Reductn		0			0		0	0	0		0	
Storage Cap Reductn		0			0		0	0	0		0	
Reduced v/c Ratio		0.40			0.63		0.39	0.39	0.45		0.25	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 54 (54%), Referenced to phase 2:EBWB, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 17.4 — Intersection LOS: B
Intersection Capacity Utilization 70.9% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: Route 229/Driveway & Route 6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	21	30	72	32	44	49	480	77	27	440	9
Future Volume (vph)	4	21	30	72	32	44	49	480	77	27	440	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.926			0.960			0.983			0.997	
Flt Protected		0.997			0.976			0.996			0.997	
Satd. Flow (prot)	0	1720	0	0	1745	0	0	1824	0	0	1852	0
Flt Permitted		0.979			0.828			0.933			0.951	
Satd. Flow (perm)	0	1689	0	0	1481	0	0	1708	0	0	1766	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			31			11			1	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		859			830			899			709	
Travel Time (s)		19.5			18.9			17.5			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	23	33	78	35	48	53	522	84	29	478	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	0	0	161	0	0	659	0	0	517	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	9.0	9.0		9.0	9.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	13.4	13.4		13.4	13.4		25.3	25.3		25.3	25.3	
Total Split (s)	24.4	24.4		24.4	24.4		25.6	25.6		25.6	25.6	
Total Split (%)	34.9%	34.9%		34.9%	34.9%		36.6%	36.6%		36.6%	36.6%	
Maximum Green (s)	20.0	20.0		20.0	20.0		20.3	20.3		20.3	20.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.8	3.8		3.8	3.8	
All-Red Time (s)	1.4	1.4		1.4	1.4		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.4			4.4			5.3			5.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		12.1			12.1			48.2			48.2	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	29%
Maximum Green (s)	16.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	9.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.17			0.17			0.69			0.69	
v/c Ratio		0.19			0.57			0.56			0.42	
Control Delay		14.4			29.1			12.3			6.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		14.4			29.1			12.3			6.7	
LOS		B			C			B			A	
Approach Delay		14.4			29.1			12.3			6.7	
Approach LOS		B			C			B			A	
Queue Length 50th (ft)		10			52			186			77	
Queue Length 95th (ft)		36			99			331			168	
Internal Link Dist (ft)		779			750			819			629	
Turn Bay Length (ft)												
Base Capacity (vph)		506			445			1180			1217	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.12			0.36			0.56			0.42	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 45.7 (65%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 12.3 Intersection LOS: B
Intersection Capacity Utilization 69.1% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 2: Route 229 & Moody St/Louisianna Ave

Lane Group	Ø3
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	4	10	25	0	7	31	580	11	1	520	24
Future Volume (vph)	19	4	10	25	0	7	31	580	11	1	520	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.959			0.969			0.998			0.994	
Flt Protected		0.972			0.963			0.997				
Satd. Flow (prot)	0	1736	0	0	1738	0	0	1853	0	0	1852	0
Flt Permitted		0.800			0.751			0.958			0.999	
Satd. Flow (perm)	0	1429	0	0	1356	0	0	1781	0	0	1850	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			108			1			3	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		480			517			662			899	
Travel Time (s)		10.9			11.8			12.9			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	4	11	27	0	8	34	630	12	1	565	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	36	0	0	35	0	0	676	0	0	592	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	14.7	14.7		14.7	14.7		25.9	25.9		25.9	25.9	
Total Split (s)	19.7	19.7		19.7	19.7		25.9	25.9		25.9	25.9	
Total Split (%)	28.1%	28.1%		28.1%	28.1%		37.0%	37.0%		37.0%	37.0%	
Maximum Green (s)	15.0	15.0		15.0	15.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.8	3.8		3.8	3.8	
All-Red Time (s)	1.7	1.7		1.7	1.7		2.1	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.7			4.7			5.9			5.9	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		10.0			10.0			57.6			57.6	

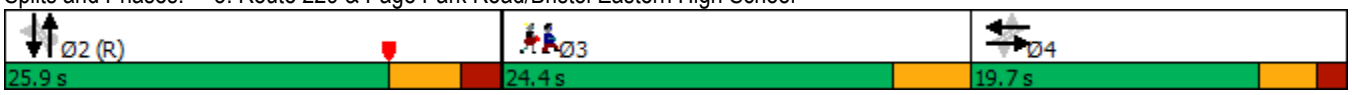
Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	22.0
Total Split (s)	24.4
Total Split (%)	35%
Maximum Green (s)	20.4
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.14			0.14			0.82			0.82	
v/c Ratio		0.17			0.12			0.46			0.39	
Control Delay		22.6			0.9			3.5			4.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		22.6			0.9			3.5			4.0	
LOS		C			A			A			A	
Approach Delay		22.6			0.9			3.5			4.0	
Approach LOS		C			A			A			A	
Queue Length 50th (ft)		10			0			73			134	
Queue Length 95th (ft)		34			0			101			45	
Internal Link Dist (ft)		400			437			582			819	
Turn Bay Length (ft)												
Base Capacity (vph)		314			375			1467			1524	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.11			0.09			0.46			0.39	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 1 (1%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.46
Intersection Signal Delay: 4.2 — Intersection LOS: A
Intersection Capacity Utilization 72.4% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Route 229 & Page Park Road/Bristol Eastern High School



Lane Group	Ø3
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	NBL	NBT	SBT	SBR	NEL	NER	Ø3
Lane Configurations							
Traffic Volume (vph)	3	550	480	76	96	23	
Future Volume (vph)	3	550	480	76	96	23	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.981		0.974		
Flt Protected					0.961		
Satd. Flow (prot)	0	1863	1827	0	1744	0	
Flt Permitted		0.998			0.961		
Satd. Flow (perm)	0	1859	1827	0	1744	0	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			11		17		
Link Speed (mph)		35	35		30		
Link Distance (ft)		1271	662		359		
Travel Time (s)		24.8	12.9		8.2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	3	598	522	83	104	25	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	601	605	0	129	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		0	0		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Turn Type	Perm	NA	NA		Prot		
Protected Phases		2	2		4		3
Permitted Phases	2						
Detector Phase	2	2	2		4		
Switch Phase							
Minimum Initial (s)	20.0	20.0	20.0		10.0		1.0
Minimum Split (s)	25.0	25.0	25.0		24.5		22.5
Total Split (s)	25.0	25.0	25.0		24.0		21.0
Total Split (%)	35.7%	35.7%	35.7%		34.3%		30%
Maximum Green (s)	20.0	20.0	20.0		20.0		19.0
Yellow Time (s)	4.0	4.0	4.0		3.0		2.0
All-Red Time (s)	1.0	1.0	1.0		1.0		0.0
Lost Time Adjust (s)		0.0	0.0		0.0		
Total Lost Time (s)		5.0	5.0		4.0		
Lead/Lag					Lag		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	5.0	5.0	5.0		3.0		0.2
Recall Mode	C-Min	C-Min	C-Min		None		None
Walk Time (s)							7.0
Flash Dont Walk (s)							10.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)		53.7	53.7		11.1		

Lane Group	NBL	NBT	SBT	SBR	NEL	NER	Ø3
Actuated g/C Ratio		0.77	0.77		0.16		
v/c Ratio		0.42	0.43		0.44		
Control Delay		5.3	2.6		27.8		
Queue Delay		0.0	0.0		0.0		
Total Delay		5.3	2.6		27.8		
LOS		A	A		C		
Approach Delay		5.3	2.6		27.8		
Approach LOS		A	A		C		
Queue Length 50th (ft)		80	36		45		
Queue Length 95th (ft)		167	47		88		
Internal Link Dist (ft)		1191	582		279		
Turn Bay Length (ft)							
Base Capacity (vph)		1425	1403		510		
Starvation Cap Reductn		0	0		0		
Spillback Cap Reductn		0	0		0		
Storage Cap Reductn		0	0		0		
Reduced v/c Ratio		0.42	0.43		0.25		

Intersection Summary	
Area Type: Other	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 2 (3%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.44	
Intersection Signal Delay: 6.2	Intersection LOS: A
Intersection Capacity Utilization 47.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Woodland Street & Route 229

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations							
Traffic Volume (vph)	98	118	500	38	108	470	
Future Volume (vph)	98	118	500	38	108	470	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0		0	160		
Storage Lanes	1	0		0	1		
Taper Length (ft)	25				100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	0.926		0.991				
Flt Protected	0.978				0.950		
Satd. Flow (prot)	1687	0	1846	0	1770	1863	
Flt Permitted	0.978				0.950		
Satd. Flow (perm)	1687	0	1846	0	1770	1863	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)	48		4				
Link Speed (mph)	30		35			35	
Link Distance (ft)	835		2121			1598	
Travel Time (s)	19.0		41.3			31.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	107	128	543	41	117	511	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	235	0	584	0	117	511	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		0			12	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	16		16			16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	9		9	15		
Turn Type	Prot		NA		Prot	NA	
Protected Phases	4		2		1	1 2	3
Permitted Phases							
Detector Phase	4		2		1	1 2	
Switch Phase							
Minimum Initial (s)	9.0		15.0		5.0		1.0
Minimum Split (s)	22.0		20.9		9.0		21.0
Total Split (s)	34.0		55.0		9.0		21.0
Total Split (%)	28.6%		46.2%		7.6%		18%
Maximum Green (s)	30.0		49.1		5.0		17.0
Yellow Time (s)	3.0		4.0		3.0		4.0
All-Red Time (s)	1.0		1.9		1.0		0.0
Lost Time Adjust (s)	0.0		0.0		0.0		
Total Lost Time (s)	4.0		5.9		4.0		
Lead/Lag	Lag		Lag		Lead		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0		4.0		1.0		0.2
Recall Mode	None		Min		None		None
Walk Time (s)							7.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Flash Dont Walk (s)							10.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	13.5		31.5		5.3	43.0	
Actuated g/C Ratio	0.21		0.49		0.08	0.66	
v/c Ratio	0.61		0.65		0.82	0.41	
Control Delay	27.7		16.1		78.1	6.5	
Queue Delay	0.0		0.0		0.0	0.0	
Total Delay	27.7		16.1		78.1	6.5	
LOS	C		B		E	A	
Approach Delay	27.7		16.1			19.8	
Approach LOS	C		B			B	
Queue Length 50th (ft)	64		153		45	74	
Queue Length 95th (ft)	166		289		#184	161	
Internal Link Dist (ft)	755		2041			1518	
Turn Bay Length (ft)					160		
Base Capacity (vph)	845		1448		143	1639	
Starvation Cap Reductn	0		0		0	0	
Spillback Cap Reductn	0		0		0	0	
Storage Cap Reductn	0		0		0	0	
Reduced v/c Ratio	0.28		0.40		0.82	0.31	

Intersection Summary	
Area Type: Other	
Cycle Length: 119	
Actuated Cycle Length: 64.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 19.6	Intersection LOS: B
Intersection Capacity Utilization 58.9%	ICU Level of Service B
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Route 229 & West Washington Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	177	86	440	157	56	470
Future Volume (vph)	177	86	440	157	56	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	490	325		130	220	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	1583	3539	1583	1770	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		93		171		
Link Speed (mph)	30		30			30
Link Distance (ft)	911		424			459
Travel Time (s)	20.7		9.6			10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	192	93	478	171	61	511
Shared Lane Traffic (%)						
Lane Group Flow (vph)	192	93	478	171	61	511
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4	2	4	1	1 2
Permitted Phases				2		
Detector Phase	4	4	2	4	1	1 2
Switch Phase						
Minimum Initial (s)	6.0	6.0	15.0	6.0	6.0	
Minimum Split (s)	25.0	25.0	20.9	25.0	10.9	
Total Split (s)	23.0	23.0	39.0	23.0	13.0	
Total Split (%)	30.7%	30.7%	52.0%	30.7%	17.3%	
Maximum Green (s)	19.0	19.0	33.1	19.0	8.1	
Yellow Time (s)	3.0	3.0	4.9	3.0	3.3	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	5.9	4.0	4.9	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	3.0	2.0	3.0	
Recall Mode	None	None	C-Min	None	None	
Walk Time (s)	1.0	1.0		1.0		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Flash Dont Walk (s)	20.0	20.0		20.0		
Pedestrian Calls (#/hr)	0	0		0		
Act Effct Green (s)	8.6	8.6	41.9	56.4	9.7	57.5
Actuated g/C Ratio	0.11	0.11	0.56	0.75	0.13	0.77
v/c Ratio	0.49	0.35	0.24	0.14	0.27	0.19
Control Delay	35.0	11.2	17.7	0.3	31.2	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.0	11.2	17.7	0.3	31.2	2.7
LOS	D	B	B	A	C	A
Approach Delay	27.3		13.1			5.8
Approach LOS	C		B			A
Queue Length 50th (ft)	43	0	86	0	26	25
Queue Length 95th (ft)	71	38	141	0	56	44
Internal Link Dist (ft)	831		344			379
Turn Bay Length (ft)	490	325		130	220	
Base Capacity (vph)	869	470	1975	1427	237	2635
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.20	0.24	0.12	0.26	0.19

Intersection Summary	
Area Type: Other	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 41 (55%), Referenced to phase 2:NBSB and 6:, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 13.0	Intersection LOS: B
Intersection Capacity Utilization 34.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 18: Route 229 & Broad Street

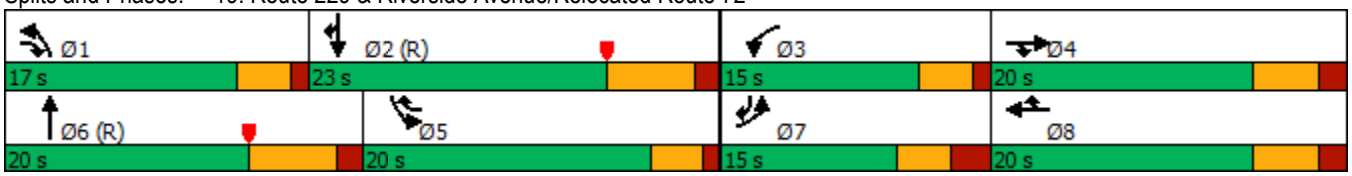
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	336	217	17	330	84	192	360	46	94	360	196
Future Volume (vph)	149	336	217	17	330	84	192	360	46	94	360	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	525		765	65		300	525		0	200		275
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	150			135			90			75		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	1770	3539	1583	1770	3479	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1863	1583	1770	3539	1583	1770	3479	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			236			91		16				156
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		918			774			907			424	
Travel Time (s)		20.9			17.6			20.6			9.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	365	236	18	359	91	209	391	50	102	391	213
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	365	236	18	359	91	209	441	0	102	391	213
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA		Prot	NA	pt+ov
Protected Phases	7	4	4 1	3	8	5 8	1	6		5	2	2 7
Permitted Phases												
Detector Phase	7	4	4 1	3	8	5 8	1	6		5	2	2 7
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	15.0		6.0	15.0	
Minimum Split (s)	11.2	28.4		10.0	28.4		10.0	21.4		10.0	21.4	
Total Split (s)	15.0	20.0		15.0	20.0		17.0	20.0		20.0	23.0	
Total Split (%)	20.0%	26.7%		20.0%	26.7%		22.7%	26.7%		26.7%	30.7%	
Maximum Green (s)	9.8	14.6		11.0	14.6		13.0	13.6		16.0	16.6	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	4.9		3.0	4.9	
All-Red Time (s)	2.2	1.7		1.0	1.7		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.4		4.0	5.4		4.0	6.4		4.0	6.4	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		22.0			22.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		1.0			1.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	7.9	22.7	39.4	6.2	11.7	26.5	12.7	23.0		13.4	21.6	34.7
Actuated g/C Ratio	0.11	0.30	0.53	0.08	0.16	0.35	0.17	0.31		0.18	0.29	0.46
v/c Ratio	0.45	0.65	0.25	0.12	0.65	0.15	0.70	0.41		0.32	0.38	0.26
Control Delay	35.2	30.0	2.2	33.9	35.2	2.3	42.7	24.3		26.4	23.2	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	35.2	30.0	2.2	33.9	35.2	2.3	42.7	24.3		26.4	23.2	2.4
LOS	D	C	A	C	D	A	D	C		C	C	A
Approach Delay		22.5			28.8			30.2			17.4	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	37	139	0	8	83	0	90	87		28	66	0
Queue Length 95th (ft)	63	#288	34	26	120	12	#181	145		72	114	26
Internal Link Dist (ft)		838			694			827			344	
Turn Bay Length (ft)	525		765	65		300	525			200		275
Base Capacity (vph)	448	562	960	259	688	727	323	1078		377	1021	853
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.36	0.65	0.25	0.07	0.52	0.13	0.65	0.41		0.27	0.38	0.25

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 34 (45%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 24.2 Intersection LOS: C
Intersection Capacity Utilization 62.3% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 19: Route 229 & Riverside Avenue/Relocated Route 72



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	329	205	113	257	41	203	510	122	80	500	55
Future Volume (vph)	48	329	205	113	257	41	203	510	122	80	500	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	240		240	400		0	145		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	150			150			70			90		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.942			0.979			0.971			0.985	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3334	0	1770	3465	0	1770	3437	0	1770	3486	0
Flt Permitted	0.556			0.187			0.206			0.390		
Satd. Flow (perm)	1036	3334	0	348	3465	0	384	3437	0	726	3486	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		97			13			25			9	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		669			802			666			907	
Travel Time (s)		15.2			18.2			15.1			20.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	358	223	123	279	45	221	554	133	87	543	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	581	0	123	324	0	221	687	0	87	603	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		D.P+P	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1 2	2 5		1	5	
Permitted Phases	4			8			5			5		
Detector Phase	7	4		3	8		1 2	2 5		1	5	
Switch Phase												
Minimum Initial (s)	4.0	7.0		4.0	7.0					4.0	15.0	
Minimum Split (s)	8.2	13.0		8.0	13.0					8.0	22.3	
Total Split (s)	10.0	18.0		10.0	22.0					10.0	25.0	
Total Split (%)	8.6%	15.5%		8.6%	19.0%					8.6%	21.6%	
Maximum Green (s)	5.8	12.0		6.0	16.0					6.0	17.7	
Yellow Time (s)	3.2	3.8		3.0	3.8					3.0	4.9	
All-Red Time (s)	1.0	2.2		1.0	2.2					1.0	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)	4.2	6.0		4.0	6.0					4.0	7.3	
Lead/Lag	Lead	Lag		Lead	Lag					Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0					2.0	3.0	
Recall Mode	None	None		None	None					None	C-Min	
Walk Time (s)												

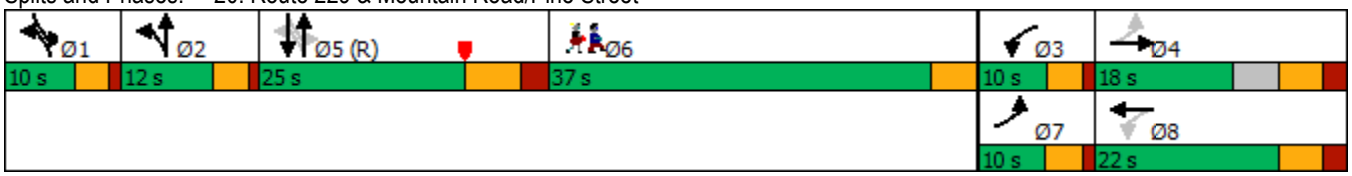
Lane Group	Ø2	Ø6
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	2	6
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	4.0	1.0
Minimum Split (s)	8.0	37.0
Total Split (s)	12.0	37.0
Total Split (%)	10%	32%
Maximum Green (s)	8.0	33.0
Yellow Time (s)	3.0	4.0
All-Red Time (s)	1.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	2.0	3.0
Recall Mode	Min	None
Walk Time (s)		7.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	31.8	24.0		37.9	28.4		57.7	47.9		36.6	23.6	
Actuated g/C Ratio	0.27	0.21		0.33	0.24		0.50	0.41		0.32	0.20	
v/c Ratio	0.16	0.76		0.55	0.38		0.40	0.48		0.27	0.84	
Control Delay	30.0	43.8		41.1	38.3		19.4	27.0		22.2	57.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	30.0	43.8		41.1	38.3		19.4	27.0		22.2	57.0	
LOS	C	D		D	D		B	C		C	E	
Approach Delay		42.6			39.1			25.1			52.6	
Approach LOS		D			D			C			D	
Queue Length 50th (ft)	25	177		62	100		78	180		28	234	
Queue Length 95th (ft)	64	#335		#159	167		183	300		79	#388	
Internal Link Dist (ft)		589			722			586			827	
Turn Bay Length (ft)	200			240			400			145		
Base Capacity (vph)	326	765		223	856		559	1435		317	715	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.16	0.76		0.55	0.38		0.40	0.48		0.27	0.84	

Intersection Summary

Area Type: Other
Cycle Length: 116
Actuated Cycle Length: 116
Offset: 43 (37%), Referenced to phase 5:NBSB, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 38.7 Intersection LOS: D
Intersection Capacity Utilization 66.5% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: Route 229 & Mountain Road/Pine Street



Lane Group	Ø2	Ø6
Flash Dont Walk (s)		26.0
Pedestrian Calls (#/hr)		5
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	4	12	9	0	4	6	705	23	6	820	125
Future Volume (vph)	117	4	12	9	0	4	6	705	23	6	820	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	130		0	70		0	55		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			25			50			70		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.973			0.850			0.995			0.980	
Flt Protected	0.950	0.963		0.950			0.950			0.950		
Satd. Flow (prot)	1681	1658	0	1770	1583	0	1770	3522	0	1770	3468	0
Flt Permitted	0.950	0.963		0.950			0.240			0.324		
Satd. Flow (perm)	1681	1658	0	1770	1583	0	447	3522	0	604	3468	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			518			2			13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		650			212			757			666	
Travel Time (s)		14.8			4.8			17.2			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	127	4	13	10	0	4	7	766	25	7	891	136
Shared Lane Traffic (%)	43%											
Lane Group Flow (vph)	72	72	0	10	4	0	7	791	0	7	1027	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Split	NA		Split	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases							6			2		
Detector Phase	4	4		8	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	11.5	11.5		10.8	10.8		9.0	21.7		9.0	21.7	
Total Split (s)	23.0	23.0		23.0	23.0		12.0	40.0		12.0	40.0	
Total Split (%)	17.8%	17.8%		17.8%	17.8%		9.3%	31.0%		9.3%	31.0%	
Maximum Green (s)	17.5	17.5		18.2	18.2		8.0	33.3		8.0	33.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	4.9		3.0	4.9	
All-Red Time (s)	2.5	2.5		1.8	1.8		1.0	1.8		1.0	1.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		4.8	4.8		4.0	6.7		4.0	6.7	
Lead/Lag	Lag	Lag					Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)												

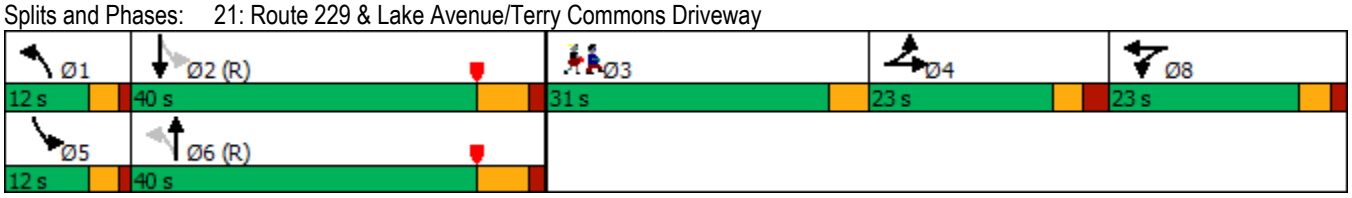
Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	24%
Maximum Green (s)	27.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	10.0	10.0		6.1	6.1		97.9	94.1		98.3	94.3	
Actuated g/C Ratio	0.08	0.08		0.05	0.05		0.76	0.73		0.76	0.73	
v/c Ratio	0.55	0.54		0.12	0.01		0.02	0.31		0.01	0.40	
Control Delay	72.6	65.4		61.9	0.0		11.0	11.1		10.8	12.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	72.6	65.4		61.9	0.0		11.0	11.1		10.8	12.0	
LOS	E	E		E	A		B	B		B	B	
Approach Delay		69.0			44.2			11.1			12.0	
Approach LOS		E			D			B			B	
Queue Length 50th (ft)	62	55		8	0		1	60		1	84	
Queue Length 95th (ft)	112	106		27	0		11	338		11	463	
Internal Link Dist (ft)		570			132			677			586	
Turn Bay Length (ft)	200			130			70			55		
Base Capacity (vph)	228	230		249	668		423	2569		533	2538	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.32	0.31		0.04	0.01		0.02	0.31		0.01	0.40	

Intersection Summary

Area Type: Other
Cycle Length: 129
Actuated Cycle Length: 129
Offset: 8 (6%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 16.0 Intersection LOS: B
Intersection Capacity Utilization 47.2% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 21: Route 229 & Lake Avenue/Terry Commons Driveway



Lane Group	Ø3
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	0	16	8	9	48	42	590	22	14	800	23
Future Volume (vph)	34	0	16	8	9	48	42	590	22	14	800	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		175	60		0	180		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			75			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.957				0.850		0.995			0.996	
Flt Protected		0.967			0.977		0.950			0.950		
Satd. Flow (prot)	0	1724	0	0	1820	1583	1770	3522	0	1770	3525	0
Flt Permitted		0.843			0.899		0.259			0.399		
Satd. Flow (perm)	0	1503	0	0	1675	1583	482	3522	0	743	3525	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		183				106		5			4	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		674			483			840			981	
Travel Time (s)		15.3			11.0			14.3			22.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	0	17	9	10	52	46	641	24	15	870	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	19	52	46	665	0	15	895	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		7			4 7		5	2		1	6	
Permitted Phases	7			4 7		4 7	2			6		
Detector Phase	7	7		4 7	4 7	4 7	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0					5.0	15.0		5.0	15.0	
Minimum Split (s)	10.8	10.8					9.0	21.1		9.0	21.1	
Total Split (s)	19.8	19.8					9.0	29.0		9.0	29.0	
Total Split (%)	27.2%	27.2%					12.3%	39.8%		12.3%	39.8%	
Maximum Green (s)	14.0	14.0					5.0	22.9		5.0	22.9	
Yellow Time (s)	3.0	3.0					3.0	4.2		3.0	4.2	
All-Red Time (s)	2.8	2.8					1.0	1.9		1.0	1.9	
Lost Time Adjust (s)		0.0					0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.8					4.0	6.1		4.0	6.1	
Lead/Lag	Lag	Lag					Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes										
Vehicle Extension (s)	2.0	2.0					2.0	0.2		2.0	0.2	
Recall Mode	None	None					None	C-Max		None	C-Max	
Walk Time (s)	24.0	24.0										

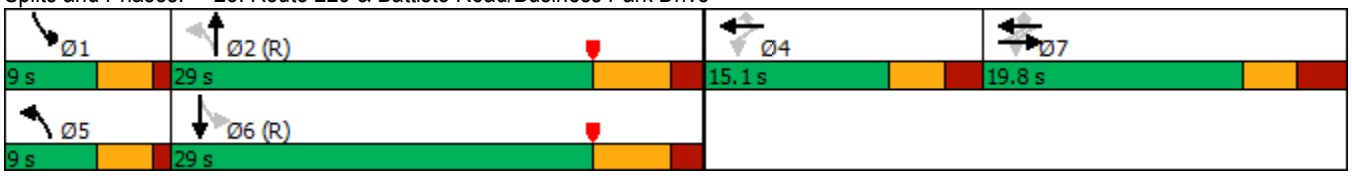
Lane Group	Ø4
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	4
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	12.1
Total Split (s)	15.1
Total Split (%)	21%
Maximum Green (s)	10.0
Yellow Time (s)	3.0
All-Red Time (s)	2.1
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	1.0	1.0										
Pedestrian Calls (#/hr)	0	0										
Act Effct Green (s)		5.0			13.6	13.6	52.3	50.2		50.2	46.2	
Actuated g/C Ratio		0.07			0.19	0.19	0.72	0.69		0.69	0.63	
v/c Ratio		0.20			0.06	0.14	0.10	0.27		0.03	0.40	
Control Delay		1.6			21.8	1.6	5.5	7.4		5.4	11.0	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		1.6			21.8	1.6	5.5	7.4		5.4	11.0	
LOS		A			C	A	A	A		A	B	
Approach Delay		1.6			7.0			7.3			10.9	
Approach LOS		A			A			A			B	
Queue Length 50th (ft)		0			7	0	7	68		2	140	
Queue Length 95th (ft)		0			22	6	18	136		8	200	
Internal Link Dist (ft)		594			403			760			901	
Turn Bay Length (ft)						175	60			180		
Base Capacity (vph)		436			475	525	441	2426		582	2237	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.12			0.04	0.10	0.10	0.27		0.03	0.40	

Intersection Summary

Area Type: Other
Cycle Length: 72.9
Actuated Cycle Length: 72.9
Offset: 34 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.40
Intersection Signal Delay: 9.0 — Intersection LOS: A
Intersection Capacity Utilization 49.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 23: Route 229 & Battisto Road/Business Park Drive



Lane Group	Ø4
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

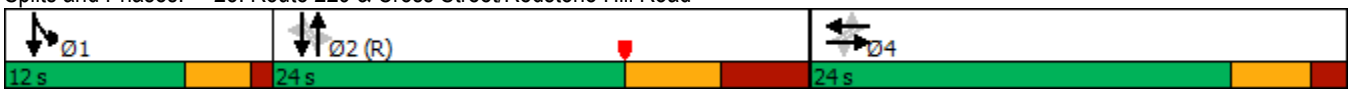
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	80	35	80	73	90	23	472	48	115	560	70
Future Volume (vph)	92	80	35	80	73	90	23	472	48	115	560	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	14	12
Storage Length (ft)	125		0	160		0	160		0	235		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			100			250		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.954			0.917			0.986			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1777	0	1770	1708	0	1770	3490	0	1770	3711	0
Flt Permitted	0.638			0.677			0.391			0.440		
Satd. Flow (perm)	1188	1777	0	1261	1708	0	728	3490	0	820	3711	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			98			17			34	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		744			601			1500			891	
Travel Time (s)		16.9			13.7			25.6			15.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	87	38	87	79	98	25	513	52	125	609	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	100	125	0	87	177	0	25	565	0	125	685	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		12			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4			2			1 2		
Detector Phase	4	4		4	4		2	2		1	1 2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		5.0		
Minimum Split (s)	29.3	29.3		29.3	29.3		23.3	23.3		9.0		
Total Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		12.0		
Total Split (%)	40.0%	40.0%		40.0%	40.0%		40.0%	40.0%		20.0%		
Maximum Green (s)	18.7	18.7		18.7	18.7		15.7	15.7		8.0		
Yellow Time (s)	3.6	3.6		3.6	3.6		4.3	4.3		3.0		
All-Red Time (s)	1.7	1.7		1.7	1.7		4.0	4.0		1.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		
Total Lost Time (s)	5.3	5.3		5.3	5.3		8.3	8.3		4.0		
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		1.0		
Recall Mode	None	None		None	None		C-Max	C-Max		None		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	23.0	23.0		23.0	23.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	10.3	10.3		10.3	10.3		24.0	24.0		36.4	40.4	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.40	0.40		0.61	0.67	
v/c Ratio	0.49	0.37		0.40	0.47		0.09	0.40		0.20	0.27	
Control Delay	29.6	18.0		26.4	14.5		9.6	9.8		5.3	4.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.6	18.0		26.4	14.5		9.6	9.8		5.3	4.6	
LOS	C	B		C	B		A	A		A	A	
Approach Delay		23.1			18.4			9.8			4.7	
Approach LOS		C			B			A			A	
Queue Length 50th (ft)	34	28		29	26		1	11		12	36	
Queue Length 95th (ft)	65	61		58	65		19	155		37	81	
Internal Link Dist (ft)		664			521			1420			811	
Turn Bay Length (ft)	125			160			160			235		
Base Capacity (vph)	370	579		393	599		291	1408		652	2419	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.27	0.22		0.22	0.30		0.09	0.40		0.19	0.28	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 53 (88%), Referenced to phase 2:NBSB and 6:, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 10.4	Intersection LOS: B
Intersection Capacity Utilization 64.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 25: Route 229 & Cross Street/Redstone Hill Road

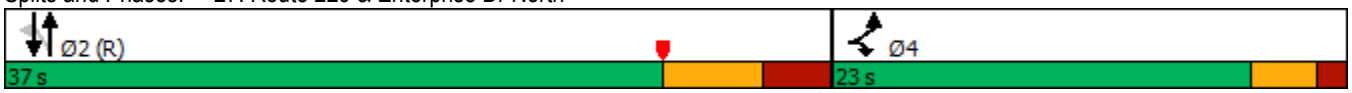


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	88	78	45	470	540	85
Future Volume (vph)	88	78	45	470	540	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12
Grade (%)	0%			6%	0%	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850			0.980	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1770	1794	0	3419	3468	0
Flt Permitted	0.950			0.851		
Satd. Flow (perm)	1770	1794	0	2922	3468	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		85			41	
Link Speed (mph)	30			40	40	
Link Distance (ft)	411			1591	1500	
Travel Time (s)	9.3			27.1	25.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	85	49	511	587	92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	96	85	0	560	679	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	0.85	1.04	1.04	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	Prot	Perm	NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases			2		2	
Detector Phase	4	4	2	2	2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	15.0	15.0	15.0	
Minimum Split (s)	20.4	20.4	22.6	22.6	22.6	
Total Split (s)	23.0	23.0	37.0	37.0	37.0	
Total Split (%)	38.3%	38.3%	61.7%	61.7%	61.7%	
Maximum Green (s)	18.6	18.6	29.4	29.4	29.4	
Yellow Time (s)	3.0	3.0	4.4	4.4	4.4	
All-Red Time (s)	1.4	1.4	3.2	3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.4	4.4		7.6	7.6	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	0.2	0.2	0.2	
Recall Mode	None	None	C-Min	C-Min	C-Min	
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	7.0	7.0		44.4	44.4	
Actuated g/C Ratio	0.12	0.12		0.74	0.74	
v/c Ratio	0.46	0.30		0.26	0.26	
Control Delay	31.6	9.3		2.1	2.7	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	31.6	9.3		2.1	2.7	
LOS	C	A		A	A	
Approach Delay	21.1			2.1	2.7	
Approach LOS	C			A	A	
Queue Length 50th (ft)	33	0		5	33	
Queue Length 95th (ft)	69	31		31	45	
Internal Link Dist (ft)	331			1511	1420	
Turn Bay Length (ft)						
Base Capacity (vph)	548	614		2161	2575	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.18	0.14		0.26	0.26	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 31 (52%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.46	
Intersection Signal Delay: 4.8	Intersection LOS: A
Intersection Capacity Utilization 53.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 27: Route 229 & Enterprise Dr North



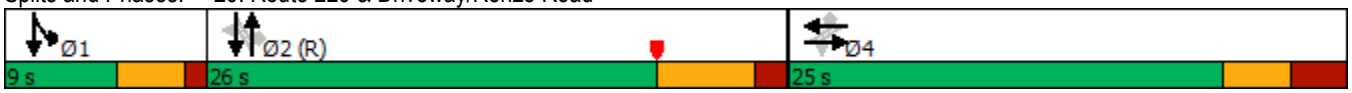
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	123	0	33	0	568	125	56	560	0
Future Volume (vph)	0	0	0	123	0	33	0	568	125	56	560	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			7%			6%	
Storage Length (ft)	0		0	0		300	280		130	165		165
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt						0.850			0.850			
Flt Protected					0.950					0.950		
Satd. Flow (prot)	0	1863	0	0	1770	1583	1798	3415	1528	1717	3433	0
Flt Permitted					0.757					0.403		
Satd. Flow (perm)	0	1863	0	0	1410	1583	1798	3415	1528	728	3433	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						125			136			
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		261			414			713			1591	
Travel Time (s)		5.9			9.4			12.2			27.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	134	0	36	0	617	136	61	609	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	134	36	0	617	136	61	609	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.05	1.05	1.05	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4		4	2		2	1 2		
Detector Phase	4	4		4	4	4	2	2	2	1	1 2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	15.0	15.0	15.0	5.0		
Minimum Split (s)	30.6	30.6		30.6	30.6	30.6	20.9	20.9	20.9	9.0		
Total Split (s)	25.0	25.0		25.0	25.0	25.0	26.0	26.0	26.0	9.0		
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	43.3%	43.3%	43.3%	15.0%		
Maximum Green (s)	19.4	19.4		19.4	19.4	19.4	20.1	20.1	20.1	5.0		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.4	4.4	4.4	3.0		
All-Red Time (s)	2.6	2.6		2.6	2.6	2.6	1.5	1.5	1.5	1.0		
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		5.6			5.6	5.6	5.9	5.9	5.9	4.0		
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	0.2	0.2	0.2	1.0		
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	24.0	24.0		24.0	24.0	24.0						
Flash Dont Walk (s)	1.0	1.0		1.0	1.0	1.0						
Pedestrian Calls (#/hr)	0	0		0	0	0						
Act Effct Green (s)					9.3	9.3		29.7	29.7	39.2	44.0	
Actuated g/C Ratio					0.16	0.16		0.50	0.50	0.65	0.73	
v/c Ratio					0.61	0.10		0.37	0.17	0.10	0.24	
Control Delay					34.9	0.6		3.9	1.1	6.3	7.1	
Queue Delay					0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay					34.9	0.6		3.9	1.1	6.3	7.1	
LOS					C	A		A	A	A	A	
Approach Delay					27.7			3.4			7.0	
Approach LOS					C			A			A	
Queue Length 50th (ft)					46	0		3	1	13	77	
Queue Length 95th (ft)					86	0		8	0	25	124	
Internal Link Dist (ft)		181			334			633			1511	
Turn Bay Length (ft)						300			130	165		
Base Capacity (vph)					455	596		1689	824	601	2517	
Starvation Cap Reductn					0	0		0	0	0	0	
Spillback Cap Reductn					0	0		0	0	0	0	
Storage Cap Reductn					0	0		0	0	0	0	
Reduced v/c Ratio					0.29	0.06		0.37	0.17	0.10	0.24	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 57 (95%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 7.5 Intersection LOS: A
Intersection Capacity Utilization 47.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 29: Route 229 & Driveway/Ronzo Road

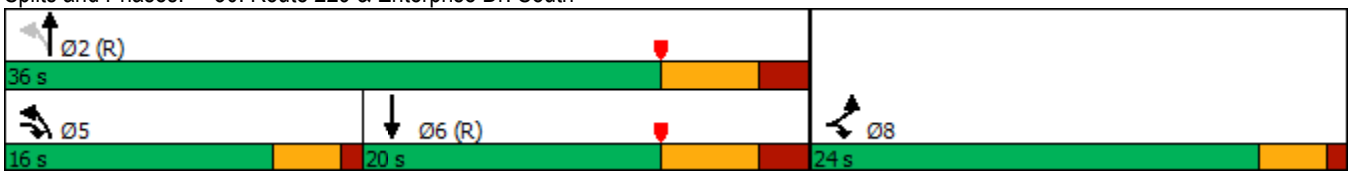


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	50	53	680	680	9
Future Volume (vph)	14	50	53	680	680	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			7%	7%	
Storage Length (ft)	0	0	745			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.998	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1708	3415	3409	0
Flt Permitted	0.950		0.329			
Satd. Flow (perm)	1770	1583	591	3415	3409	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		11			2	
Link Speed (mph)	30			40	40	
Link Distance (ft)	703			1424	713	
Travel Time (s)	16.0			24.3	12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	54	58	739	739	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	54	58	739	749	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.05	1.05	1.05	1.05
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	pt+ov	pm+pt	NA	NA	
Protected Phases	8	8 5	5	2	6	
Permitted Phases			2			
Detector Phase	8	8 5	5	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	24.0		9.0	21.7	21.7	
Total Split (s)	24.0		16.0	36.0	20.0	
Total Split (%)	40.0%		26.7%	60.0%	33.3%	
Maximum Green (s)	20.0		12.0	29.3	13.3	
Yellow Time (s)	3.0		3.0	4.4	4.4	
All-Red Time (s)	1.0		1.0	2.3	2.3	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0		4.0	6.7	6.7	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	C-Min	C-Min	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Walk Time (s)	19.0					
Flash Dont Walk (s)	1.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	6.9	13.1	49.0	49.0	39.4	
Actuated g/C Ratio	0.12	0.22	0.82	0.82	0.66	
v/c Ratio	0.07	0.15	0.10	0.27	0.33	
Control Delay	23.7	14.2	1.4	3.2	2.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	23.7	14.2	1.4	3.2	2.9	
LOS	C	B	A	A	A	
Approach Delay	16.3			3.0	2.9	
Approach LOS	B			A	A	
Queue Length 50th (ft)	5	11	4	122	34	
Queue Length 95th (ft)	19	31	0	0	53	
Internal Link Dist (ft)	623			1344	633	
Turn Bay Length (ft)			745			
Base Capacity (vph)	590	592	706	2788	2240	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.03	0.09	0.08	0.27	0.33	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.33	
Intersection Signal Delay: 3.6	Intersection LOS: A
Intersection Capacity Utilization 39.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 30: Route 229 & Enterprise Dr. South

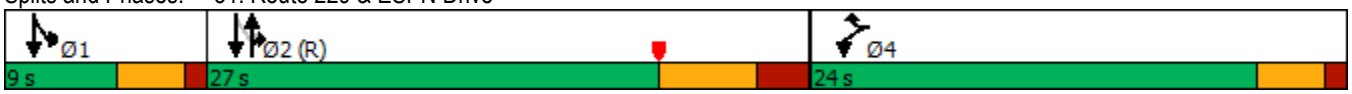


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	26	24	708	28	23	730
Future Volume (vph)	26	24	708	28	23	730
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			7%
Storage Length (ft)	0	0		105	95	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3539	1583	1708	3415
Flt Permitted	0.950				0.345	
Satd. Flow (perm)	1770	1583	3539	1583	620	3415
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		26		30		
Link Speed (mph)	30		40			40
Link Distance (ft)	370		539			1424
Travel Time (s)	8.4		9.2			24.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	26	770	30	25	793
Shared Lane Traffic (%)						
Lane Group Flow (vph)	28	26	770	30	25	793
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.05	1.05
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Prot	NA	Prot	pm+pt	NA
Protected Phases	4	4	2	2	1	1 2
Permitted Phases					1 2	
Detector Phase	4	4	2	2	1	1 2
Switch Phase						
Minimum Initial (s)	5.0	5.0	14.0	14.0	4.0	
Minimum Split (s)	22.1	22.1	20.8	20.8	8.0	
Total Split (s)	24.0	24.0	27.0	27.0	9.0	
Total Split (%)	40.0%	40.0%	45.0%	45.0%	15.0%	
Maximum Green (s)	19.9	19.9	20.2	20.2	5.0	
Yellow Time (s)	3.0	3.0	4.4	4.4	3.0	
All-Red Time (s)	1.1	1.1	2.4	2.4	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.1	4.1	6.8	6.8	4.0	
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	5.0	5.0	2.0	
Recall Mode	None	None	C-Min	C-Min	None	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Walk Time (s)	17.0	17.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	5.7	5.7	33.6	33.6	45.8	51.4
Actuated g/C Ratio	0.10	0.10	0.56	0.56	0.76	0.86
v/c Ratio	0.17	0.15	0.39	0.03	0.04	0.27
Control Delay	26.8	13.0	5.1	1.5	0.5	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	13.0	5.1	1.5	0.5	0.5
LOS	C	B	A	A	A	A
Approach Delay	20.2		5.0			0.5
Approach LOS	C		A			A
Queue Length 50th (ft)	10	0	41	0	1	5
Queue Length 95th (ft)	30	19	173	3	m1	6
Internal Link Dist (ft)	290		459			1344
Turn Bay Length (ft)				105	95	
Base Capacity (vph)	587	542	1982	899	644	2926
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.05	0.39	0.03	0.04	0.27

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 15.7 (26%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.39	
Intersection Signal Delay: 3.3	Intersection LOS: A
Intersection Capacity Utilization 32.8%	ICU Level of Service A
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 31: Route 229 & ESPN Drive



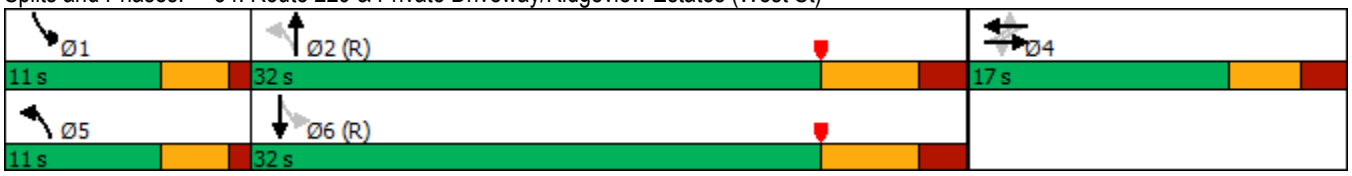
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	7	6	41	8	6	16	719	57	9	730	16
Future Volume (vph)	11	7	6	41	8	6	16	719	57	9	730	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		50	0		120	120		0	135		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	25			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.930			0.934			0.989			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1732	0	1770	1740	0	1770	3500	0	1770	1857	0
Flt Permitted	0.816			0.816			0.253			0.329		
Satd. Flow (perm)	1520	1732	0	1520	1740	0	471	3500	0	613	1857	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			7			17			2	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		299			498			1447			922	
Travel Time (s)		6.8			11.3			24.7			15.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	8	7	45	9	7	17	782	62	10	793	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	15	0	45	16	0	17	844	0	10	810	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Left
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4			2			6		
Detector Phase	4	4		4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	13.4	13.4		13.4	13.4		9.0	21.6		9.0	21.6	
Total Split (s)	17.0	17.0		17.0	17.0		11.0	32.0		11.0	32.0	
Total Split (%)	28.3%	28.3%		28.3%	28.3%		18.3%	53.3%		18.3%	53.3%	
Maximum Green (s)	11.6	11.6		11.6	11.6		7.0	25.4		7.0	25.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.1	2.1		2.1	2.1		1.0	2.2		1.0	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	5.4		5.4	5.4		4.0	6.6		4.0	6.6	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	0.2		1.5	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	8.1	8.1		8.1	8.1		47.0	46.1		47.0	46.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.78	0.77		0.78	0.77	
v/c Ratio	0.06	0.06		0.22	0.07		0.04	0.31		0.02	0.57	
Control Delay	23.3	18.4		25.9	18.6		2.2	2.9		0.9	7.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	23.3	18.4		25.9	18.6		2.2	2.9		0.9	7.9	
LOS	C	B		C	B		A	A		A	A	
Approach Delay		20.5			24.0			2.8			7.8	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)	4	3		15	3		1	35		0	102	
Queue Length 95th (ft)	16	17		40	17		m3	m51		m1	#487	
Internal Link Dist (ft)		219			418			1367			842	
Turn Bay Length (ft)	50						120			135		
Base Capacity (vph)	293	340		293	342		523	2691		619	1426	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.04		0.15	0.05		0.03	0.31		0.02	0.57	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 50 (83%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 6.2 Intersection LOS: A
Intersection Capacity Utilization 58.3% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 34: Route 229 & Private Driveway/Ridgeview Estates (West St)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	22	105	23	25	20	29	557	84	138	620	16
Future Volume (vph)	132	22	105	23	25	20	29	557	84	138	620	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	80		0	125		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.945			0.933			0.980			0.996	
Flt Protected		0.975		0.950			0.950			0.950		
Satd. Flow (prot)	0	1716	0	1770	1738	0	1770	3468	0	1770	1855	0
Flt Permitted		0.814		0.557			0.298			0.340		
Satd. Flow (perm)	0	1433	0	1038	1738	0	555	3468	0	633	1855	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48			22			36			3	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		906			1161			1141			1447	
Travel Time (s)		20.6			26.4			19.4			24.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	143	24	114	25	27	22	32	605	91	150	674	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	281	0	25	49	0	32	696	0	150	691	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Detector Phase	4	4		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	25.4	25.4		25.4	25.4		9.0	22.1		9.0	22.1	
Total Split (s)	15.0	15.0		15.0	15.0		11.0	34.0		11.0	34.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		18.3%	56.7%		18.3%	56.7%	
Maximum Green (s)	8.6	8.6		8.6	8.6		7.0	26.9		7.0	26.9	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	2.7		1.0	2.7	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.4		6.4	6.4		4.0	7.1		4.0	7.1	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	0.2		2.0	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	18.0	18.0		18.0	18.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		8.6		8.6	8.6		36.8	29.6		40.1	34.2	
Actuated g/C Ratio		0.14		0.14	0.14		0.61	0.49		0.67	0.57	
v/c Ratio		1.14		0.17	0.18		0.07	0.40		0.28	0.65	
Control Delay		126.9		25.7	17.0		4.1	14.0		2.7	12.3	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		126.9		25.7	17.0		4.1	14.0		2.7	12.3	
LOS		F		C	B		A	B		A	B	
Approach Delay		126.9			19.9			13.6			10.6	
Approach LOS		F			B			B			B	
Queue Length 50th (ft)		~107		8	9		3	86		10	50	
Queue Length 95th (ft)		#240		27	34		12	168		m1	#388	
Internal Link Dist (ft)		826			1081			1061			1367	
Turn Bay Length (ft)							80			125		
Base Capacity (vph)		246		148	267		495	1726		555	1058	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		1.14		0.17	0.18		0.06	0.40		0.27	0.65	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 24 (40%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 29.1 Intersection LOS: C
Intersection Capacity Utilization 73.9% ICU Level of Service D
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 35: Route 229 & West Queen Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	30	45	38	640	720	33
Future Volume (vph)	30	45	38	640	720	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt		0.850			0.994	
Flt Protected	0.950			0.997		
Satd. Flow (prot)	1770	1583	0	3529	1852	0
Flt Permitted	0.950			0.840		
Satd. Flow (perm)	1770	1583	0	2973	1852	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		49			5	
Link Speed (mph)	30			40	40	
Link Distance (ft)	745			2535	1141	
Travel Time (s)	16.9			43.2	19.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	49	41	696	783	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	49	0	737	819	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	Perm	D.P+P	NA	NA	
Protected Phases	4		1	1 2	2	
Permitted Phases		4	2			
Detector Phase	4	4	1	1 2	2	
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		15.0	
Minimum Split (s)	30.0	30.0	8.0		24.8	
Total Split (s)	18.0	18.0	8.0		34.0	
Total Split (%)	30.0%	30.0%	13.3%		56.7%	
Maximum Green (s)	14.0	14.0	4.0		27.2	
Yellow Time (s)	3.0	3.0	3.0		4.4	
All-Red Time (s)	1.0	1.0	1.0		2.4	
Lost Time Adjust (s)	0.0	0.0			0.0	
Total Lost Time (s)	4.0	4.0			6.8	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	None	None	Max		C-Max	
Walk Time (s)	15.0	15.0				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	7.3	7.3		45.1	27.2	
Actuated g/C Ratio	0.12	0.12		0.75	0.45	
v/c Ratio	0.15	0.21		0.31	0.97	
Control Delay	25.1	10.6		2.5	35.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	25.1	10.6		2.5	35.2	
LOS	C	B		A	D	
Approach Delay	16.4			2.5	35.2	
Approach LOS	B			A	D	
Queue Length 50th (ft)	11	0		31	325	
Queue Length 95th (ft)	32	25		51	m#455	
Internal Link Dist (ft)	665			2455	1061	
Turn Bay Length (ft)		100				
Base Capacity (vph)	413	406		2372	842	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.08	0.12		0.31	0.97	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 44 (73%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 19.5 Intersection LOS: B
Intersection Capacity Utilization 58.6% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 36: Route 229 & Welch Road

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	62	602	55	74	690
Future Volume (vph)	49	62	602	55	74	690
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		7%			0%
Storage Length (ft)	0	95		0	205	
Storage Lanes	1	1		0	1	
Taper Length (ft)	100				180	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt		0.850	0.987			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3371	0	1770	1863
Flt Permitted	0.950				0.373	
Satd. Flow (perm)	1770	1583	3371	0	695	1863
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		67	15			
Link Speed (mph)	30		40			40
Link Distance (ft)	911		3080			2535
Travel Time (s)	20.7		52.5			43.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	67	654	60	80	750
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	67	714	0	80	750
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.05	1.05	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	4		2		1	1 2
Permitted Phases		4			1 2	
Detector Phase	4	4	2		1	1 2
Switch Phase						
Minimum Initial (s)	9.0	9.0	25.0		5.0	
Minimum Split (s)	20.0	20.0	32.6		9.0	
Total Split (s)	24.0	24.0	77.6		13.0	
Total Split (%)	20.9%	20.9%	67.7%		11.3%	
Maximum Green (s)	20.0	20.0	70.0		9.0	
Yellow Time (s)	3.0	3.0	4.9		3.0	
All-Red Time (s)	1.0	1.0	2.7		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0	7.6		4.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	4.0		2.0	
Recall Mode	None	None	Min		Min	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	9.9	9.9	34.4		46.9	52.4
Actuated g/C Ratio	0.15	0.15	0.52		0.71	0.80
v/c Ratio	0.20	0.23	0.40		0.13	0.50
Control Delay	32.6	11.8	10.3		2.8	4.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	32.6	11.8	10.3		2.8	4.6
LOS	C	B	B		A	A
Approach Delay	21.0		10.3			4.5
Approach LOS	C		B			A
Queue Length 50th (ft)	18	0	88		6	96
Queue Length 95th (ft)	64	38	129		16	170
Internal Link Dist (ft)	831		3000			2455
Turn Bay Length (ft)		95			205	
Base Capacity (vph)	574	558	3197		663	1841
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.09	0.12	0.22		0.12	0.41

Intersection Summary	
Area Type: Other	
Cycle Length: 114.6	
Actuated Cycle Length: 65.6	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 8.2	Intersection LOS: A
Intersection Capacity Utilization 50.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 38: Route 229 & Spring Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	33	46	611	31	61	680
Future Volume (vph)	33	46	611	31	61	680
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	12	12	12	12
Grade (%)	0%		0%			7%
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.922		0.993			
Flt Protected	0.979					0.996
Satd. Flow (prot)	1793	0	3514	0	0	1790
Flt Permitted	0.979					0.900
Satd. Flow (perm)	1793	0	3514	0	0	1618
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	50		12			
Link Speed (mph)	30		40			40
Link Distance (ft)	335		424			3080
Travel Time (s)	7.6		7.2			52.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	50	664	34	66	739
Shared Lane Traffic (%)						
Lane Group Flow (vph)	86	0	698	0	0	805
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	14		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.92	0.92	1.00	1.00	1.05	1.05
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot		NA		Perm	NA
Protected Phases	4		2			2
Permitted Phases					2	
Detector Phase	4		2		2	2
Switch Phase						
Minimum Initial (s)	9.0		15.0		15.0	15.0
Minimum Split (s)	23.0		21.3		21.3	21.3
Total Split (s)	24.0		46.3		46.3	46.3
Total Split (%)	34.1%		65.9%		65.9%	65.9%
Maximum Green (s)	20.0		40.0		40.0	40.0
Yellow Time (s)	3.0		4.6		4.6	4.6
All-Red Time (s)	1.0		1.7		1.7	1.7
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	4.0		6.3			6.3
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.5		2.5		2.5	2.5
Recall Mode	None		Min		Min	Min
Walk Time (s)	18.0					
Flash Dont Walk (s)	1.0					

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	9.4		43.4			43.4
Actuated g/C Ratio	0.16		0.75			0.75
v/c Ratio	0.26		0.26			0.66
Control Delay	14.5		3.6			9.1
Queue Delay	0.0		0.0			0.0
Total Delay	14.5		3.6			9.1
LOS	B		A			A
Approach Delay	14.5		3.6			9.1
Approach LOS	B		A			A
Queue Length 50th (ft)	13		41			148
Queue Length 95th (ft)	45		60			279
Internal Link Dist (ft)	255		344			3000
Turn Bay Length (ft)						
Base Capacity (vph)	681		2648			1218
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.13		0.26			0.66

Intersection Summary	
Area Type: Other	
Cycle Length: 70.3	
Actuated Cycle Length: 57.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 7.0	Intersection LOS: A
Intersection Capacity Utilization 78.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 41: Route 229 & Curtiss Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	0	22	26	0	11	40	679	16	7	690	30
Future Volume (vph)	12	0	22	26	0	11	40	679	16	7	690	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	65		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.912			0.959			0.997			0.994	
Flt Protected		0.983			0.966		0.950			0.950		
Satd. Flow (prot)	0	1670	0	0	1726	0	1770	3529	0	1770	1852	0
Flt Permitted		0.876			0.768		0.311			0.365		
Satd. Flow (perm)	0	1488	0	0	1372	0	579	3529	0	680	1852	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		58			58			6			6	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		287			281			412			424	
Travel Time (s)		6.5			6.4			7.0			7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	0	24	28	0	12	43	738	17	8	750	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	0	0	40	0	43	755	0	8	783	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			15	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	17.5	17.5		17.5	17.5		21.4	21.4		21.4	21.4	
Total Split (s)	22.0	22.0		22.0	22.0		42.4	42.4		42.4	42.4	
Total Split (%)	34.2%	34.2%		34.2%	34.2%		65.8%	65.8%		65.8%	65.8%	
Maximum Green (s)	17.5	17.5		17.5	17.5		36.0	36.0		36.0	36.0	
Yellow Time (s)	3.4	3.4		3.4	3.4		4.9	4.9		4.9	4.9	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		6.4	6.4		6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Recall Mode	C-Min	C-Min		C-Min	C-Min		Max	Max		Max	Max	
Walk Time (s)	12.0	12.0		12.0	12.0							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		7.0			7.0		46.5	46.5		46.5	46.5	
Actuated g/C Ratio		0.11			0.11		0.72	0.72		0.72	0.72	
v/c Ratio		0.17			0.20		0.10	0.30		0.02	0.59	
Control Delay		6.9			8.2		3.4	3.5		2.6	6.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	1.2	
Total Delay		6.9			8.2		3.4	3.5		2.6	7.6	
LOS		A			A		A	A		A	A	
Approach Delay		6.9			8.2			3.5			7.6	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)		0			0		4	41		1	112	
Queue Length 95th (ft)		16			18		11	58		3	185	
Internal Link Dist (ft)		207			201			332			344	
Turn Bay Length (ft)							100			65		
Base Capacity (vph)		446			415		418	2549		490	1338	
Starvation Cap Reductn		0			0		0	0		0	322	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.08			0.10		0.10	0.30		0.02	0.77	

Intersection Summary

Area Type: Other
Cycle Length: 64.4
Actuated Cycle Length: 64.4
Offset: 49 (76%), Referenced to phase 4:EBWB, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 5.6 — Intersection LOS: A
Intersection Capacity Utilization 53.0% — ICU Level of Service A
Analysis Period (min) 15

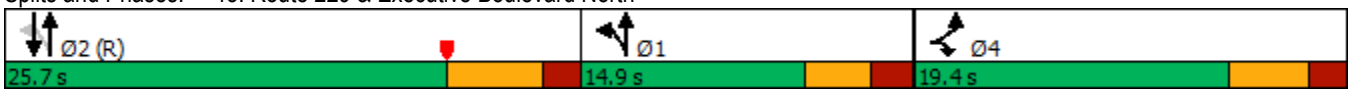
Splits and Phases: 42: Route 229 & Corporate Drive/Centrion Plaza Drive

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	29	713	730	11
Future Volume (vph)	0	0	29	713	730	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	360	220			240
Storage Lanes	1	1	1			1
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt					0.998	
Flt Protected			0.950			
Satd. Flow (prot)	1863	1863	1770	3539	3532	0
Flt Permitted			0.348			
Satd. Flow (perm)	1863	1863	648	3539	3532	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)					3	
Link Speed (mph)	30			40	40	
Link Distance (ft)	694			570	291	
Travel Time (s)	15.8			9.7	5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	32	775	793	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	32	775	805	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	8	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	Prot	pm+pt	NA	NA	
Protected Phases	4	4	1	1 2	2	
Permitted Phases			1 2			
Detector Phase	4	4	1	1 2	2	
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		15.0	
Minimum Split (s)	12.4	12.4	8.9		21.0	
Total Split (s)	19.4	19.4	14.9		25.7	
Total Split (%)	32.3%	32.3%	24.8%		42.8%	
Maximum Green (s)	14.0	14.0	10.0		19.7	
Yellow Time (s)	3.6	3.6	3.0		4.3	
All-Red Time (s)	1.8	1.8	1.9		1.7	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.4	5.4	4.9		6.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.5	2.5	2.0		0.2	
Recall Mode	None	None	None		C-Max	
Walk Time (s)	24.0	24.0				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)			50.2	60.0	42.2	
Actuated g/C Ratio			0.84	1.00	0.70	
v/c Ratio			0.05	0.22	0.32	
Control Delay			0.6	0.1	4.0	
Queue Delay			0.0	0.0	0.0	
Total Delay			0.6	0.1	4.0	
LOS			A	A	A	
Approach Delay				0.2	4.0	
Approach LOS				A	A	
Queue Length 50th (ft)			1	0	44	
Queue Length 95th (ft)			0	0	73	
Internal Link Dist (ft)	614			490	211	
Turn Bay Length (ft)			220			
Base Capacity (vph)			762	3435	2487	
Starvation Cap Reductn			0	0	0	
Spillback Cap Reductn			0	0	0	
Storage Cap Reductn			0	0	0	
Reduced v/c Ratio			0.04	0.23	0.32	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 59 (98%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.32	
Intersection Signal Delay: 2.1	Intersection LOS: A
Intersection Capacity Utilization 28.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 43: Route 229 & Executive Boulevard North

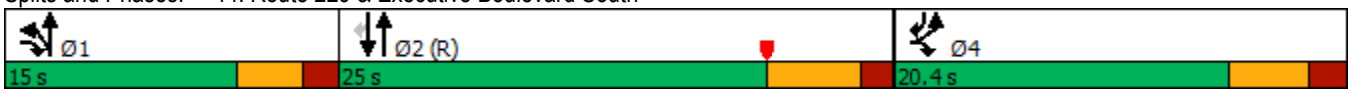


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	107	93	135	635	640	93
Future Volume (vph)	107	93	135	635	640	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			5%	0%	
Storage Length (ft)	860	370	335			250
Storage Lanes	1	1	2			1
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	0.88	0.97	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	2787	3347	3451	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	2787	3347	3451	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		101				101
Link Speed (mph)	30			40	40	
Link Distance (ft)	945			579	570	
Travel Time (s)	21.5			9.9	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	116	101	147	690	696	101
Shared Lane Traffic (%)						
Lane Group Flow (vph)	116	101	147	690	696	101
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			24	20	
Link Offset(ft)	0			0	-4	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.03	1.03	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot	pt+ov	Prot	NA	NA	pm+ov
Protected Phases	4	1 4	1	1 2	2	4
Permitted Phases		1 4				2
Detector Phase	4	1 4	1	1 2	2	4
Switch Phase						
Minimum Initial (s)	7.0		4.0		15.0	7.0
Minimum Split (s)	12.4		8.6		20.8	12.4
Total Split (s)	20.4		15.0		25.0	20.4
Total Split (%)	33.8%		24.8%		41.4%	33.8%
Maximum Green (s)	15.0		10.4		19.2	15.0
Yellow Time (s)	3.6		3.0		4.3	3.6
All-Red Time (s)	1.8		1.6		1.5	1.8
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.4		4.6		5.8	5.4
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.5		2.0		0.2	2.5
Recall Mode	None		None		C-Max	None

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Walk Time (s)	22.0					22.0
Flash Dont Walk (s)	1.0					1.0
Pedestrian Calls (#/hr)	0					0
Act Effct Green (s)	9.1	22.7	10.2	44.7	27.8	42.7
Actuated g/C Ratio	0.15	0.38	0.17	0.74	0.46	0.71
v/c Ratio	0.43	0.09	0.26	0.27	0.43	0.09
Control Delay	27.9	2.4	22.0	4.1	14.4	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.9	2.4	22.0	4.1	14.4	1.4
LOS	C	A	C	A	B	A
Approach Delay	16.0			7.2	12.8	
Approach LOS	B			A	B	
Queue Length 50th (ft)	39	0	23	40	94	0
Queue Length 95th (ft)	77	10	43	74	162	13
Internal Link Dist (ft)	865			499	490	
Turn Bay Length (ft)	860	370	335			250
Base Capacity (vph)	439	1179	637	2516	1628	1267
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.09	0.23	0.27	0.43	0.08

Intersection Summary	
Area Type: Other	
Cycle Length: 60.4	
Actuated Cycle Length: 60.4	
Offset: 21 (35%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.43	
Intersection Signal Delay: 10.6	Intersection LOS: B
Intersection Capacity Utilization 40.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 44: Route 229 & Executive Boulevard South



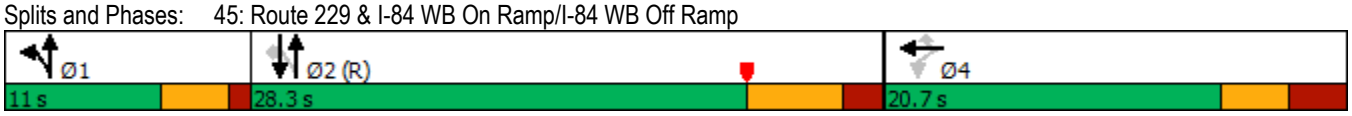
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	146	0	170	38	600	0	0	370	370
Future Volume (vph)	0	0	0	146	0	170	38	600	0	0	370	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			5%	
Storage Length (ft)	0		0	240		440	90		0	0		250
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			100			100			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950	0.950		0.950					
Satd. Flow (prot)	0	0	0	1681	1681	1583	1770	3539	0	0	3451	1544
Flt Permitted				0.950	0.950		0.515					
Satd. Flow (perm)	0	0	0	1681	1681	1583	959	3539	0	0	3451	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						185						402
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		337			747			508			579	
Travel Time (s)		7.7			17.0			8.7			9.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	159	0	185	41	652	0	0	402	402
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	0	0	79	80	185	41	652	0	0	402	402
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			18			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					4		1	1 2			2	
Permitted Phases				4		4	1 2					2
Detector Phase				4	4	4	1	1 2			2	2
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0	5.0				15.0	15.0
Minimum Split (s)				12.7	12.7	12.7	9.0				21.2	21.2
Total Split (s)				20.7	20.7	20.7	11.0				28.3	28.3
Total Split (%)				34.5%	34.5%	34.5%	18.3%				47.2%	47.2%
Maximum Green (s)				15.0	15.0	15.0	7.0				22.1	22.1
Yellow Time (s)				3.0	3.0	3.0	3.0				4.3	4.3
All-Red Time (s)				2.7	2.7	2.7	1.0				1.9	1.9
Lost Time Adjust (s)				0.0	0.0	0.0	0.0				0.0	0.0
Total Lost Time (s)				5.7	5.7	5.7	4.0				6.2	6.2
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)				2.0	2.0	2.0	2.0				0.2	0.2
Recall Mode				None	None	None	None				C-Max	C-Max

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)				8.2	8.2	8.2	38.1	42.1			27.0	27.0
Actuated g/C Ratio				0.14	0.14	0.14	0.64	0.70			0.45	0.45
v/c Ratio				0.34	0.35	0.49	0.06	0.26			0.26	0.44
Control Delay				27.2	27.4	9.1	3.5	3.8			11.7	3.4
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				27.2	27.4	9.1	3.5	3.8			11.7	3.4
LOS				C	C	A	A	A			B	A
Approach Delay					17.5			3.8			7.5	
Approach LOS					B			A			A	
Queue Length 50th (ft)				28	28	0	3	32			43	0
Queue Length 95th (ft)				60	61	45	12	63			83	48
Internal Link Dist (ft)		257			667			428			499	
Turn Bay Length (ft)				240		440	90					250
Base Capacity (vph)				420	420	534	732	2441			1553	915
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.19	0.19	0.35	0.06	0.27			0.26	0.44

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 20 (33%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.49
Intersection Signal Delay: 8.0 Intersection LOS: A
Intersection Capacity Utilization 46.2% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 45: Route 229 & I-84 WB On Ramp/I-84 WB Off Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	825	76	258	400	5	234	0	381	5	10	0
Future Volume (vph)	5	825	76	258	400	5	234	0	381	5	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	150		150	0		0
Storage Lanes	0		1	0		0	1		1	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.999				0.850			
Flt Protected					0.981		0.950	0.950			0.985	
Satd. Flow (prot)	0	3539	1583	0	3468	0	1681	1681	1583	0	1835	0
Flt Permitted		0.951			0.536		0.950	0.950			0.985	
Satd. Flow (perm)	0	3366	1583	0	1895	0	1681	1681	1583	0	1835	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			154		1				151			
Link Speed (mph)		35			35			35			30	
Link Distance (ft)		363			299			709			169	
Travel Time (s)		7.1			5.8			13.8			3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	897	83	280	435	5	254	0	414	5	11	0
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	902	83	0	720	0	127	127	414	0	16	0
Turn Type	Perm	NA	Perm	D.P+P	NA		Split	NA	pm+ov	Split	NA	
Protected Phases		2		1	1 2		5	5	1	4	4	
Permitted Phases	2		2	2					5			
Detector Phase	2	2	2	1	1 2		5	5	1	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	7.0			9.0	9.0	7.0	5.0	5.0	
Minimum Split (s)	22.4	22.4	22.4	11.0			13.0	13.0	11.0	24.3	24.3	
Total Split (s)	41.0	41.0	41.0	10.0			19.0	19.0	10.0	10.0	10.0	
Total Split (%)	51.3%	51.3%	51.3%	12.5%			23.8%	23.8%	12.5%	12.5%	12.5%	
Maximum Green (s)	33.6	33.6	33.6	6.0			15.0	15.0	6.0	3.7	3.7	
Yellow Time (s)	4.4	4.4	4.4	3.0			3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0	3.0	1.0			1.0	1.0	1.0	3.3	3.3	
Lost Time Adjust (s)		0.0	0.0				0.0	0.0	0.0		0.0	
Total Lost Time (s)		7.4	7.4				4.0	4.0	4.0		6.3	
Lead/Lag	Lag	Lag	Lag	Lead					Lead			
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2	0.2	0.2			3.0	3.0	0.2	1.5	1.5	
Recall Mode	C-Max	C-Max	C-Max	Min			Min	Min	Min	None	None	
Walk Time (s)										17.0	17.0	
Flash Dont Walk (s)										1.0	1.0	
Pedestrian Calls (#/hr)										0	0	
Act Effct Green (s)		43.5	43.5		54.4		11.6	11.6	22.3		4.8	
Actuated g/C Ratio		0.54	0.54		0.68		0.14	0.14	0.28		0.06	
v/c Ratio		0.49	0.09		0.50		0.52	0.52	0.75		0.15	
Control Delay		13.8	0.4		6.7		39.1	39.1	24.7		39.3	
Queue Delay		0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Delay		13.8	0.4		6.7		39.1	39.1	24.7		39.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		B	A		A		D	D	C		D	
Approach Delay		12.6			6.7			30.2			39.3	
Approach LOS		B			A			C			D	
Queue Length 50th (ft)		127	0		44		63	63	118		8	
Queue Length 95th (ft)		244	3		122		112	112	#203		27	
Internal Link Dist (ft)		283			219			629			89	
Turn Bay Length (ft)			150				150		150			
Base Capacity (vph)		1828	930		1438		315	315	550		109	
Starvation Cap Reductn		0	0		0		0	0	0		0	
Spillback Cap Reductn		0	0		0		0	0	0		0	
Storage Cap Reductn		0	0		0		0	0	0		0	
Reduced v/c Ratio		0.49	0.09		0.50		0.40	0.40	0.75		0.15	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 73 (91%), Referenced to phase 2:EBWB, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 16.0 Intersection LOS: B
Intersection Capacity Utilization 67.6% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Route 229/Driveway & Route 6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	55	65	62	25	21	11	559	107	46	564	20
Future Volume (vph)	15	55	65	62	25	21	11	559	107	46	564	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	200		0	200		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.935			0.931			0.976			0.995	
Flt Protected		0.995		0.950			0.950			0.950		
Satd. Flow (prot)	0	1733	0	1770	1734	0	1681	1727	0	1770	1853	0
Flt Permitted		0.964		0.555			0.377			0.307		
Satd. Flow (perm)	0	1679	0	1034	1734	0	667	1727	0	572	1853	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		859			830			899			709	
Travel Time (s)		19.5			18.9			17.5			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	60	71	67	27	23	12	608	116	50	613	22
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	0	147	0	67	50	0	11	725	0	50	635	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	9.0	9.0		9.0	9.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	13.4	13.4		13.4	13.4		36.3	36.3		36.3	36.3	
Total Split (s)	25.0	25.0		25.0	25.0		45.0	45.0		45.0	45.0	
Total Split (%)	35.7%	35.7%		35.7%	35.7%		64.3%	64.3%		64.3%	64.3%	
Maximum Green (s)	20.6	20.6		20.6	20.6		39.7	39.7		39.7	39.7	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.8	3.8		3.8	3.8	
All-Red Time (s)	1.4	1.4		1.4	1.4		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.4		4.4	4.4		5.3	5.3		5.3	5.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)							20.0	20.0		20.0	20.0	
Flash Dont Walk (s)							11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)		11.9		11.9	11.9		52.1	52.1		52.1	52.1	
Actuated g/C Ratio		0.17		0.17	0.17		0.74	0.74		0.74	0.74	
v/c Ratio		0.52		0.38	0.17		0.02	0.56		0.12	0.46	
Control Delay		32.3		31.2	24.8		4.6	6.2		5.4	6.6	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		32.3		31.2	24.8		4.6	6.2		5.4	6.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		C		C	C		A	A		A	A	
Approach Delay		32.3			28.5			6.2			6.6	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)		59		26	19		1	134		6	101	
Queue Length 95th (ft)		102		57	42		m3	145		21	216	
Internal Link Dist (ft)		779			750			819			629	
Turn Bay Length (ft)				100			200			200		
Base Capacity (vph)		494		304	510		496	1286		426	1379	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.30		0.22	0.10		0.02	0.56		0.12	0.46	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 10.2 Intersection LOS: B
Intersection Capacity Utilization 60.7% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Route 229 & Moody St/Louisianna Ave

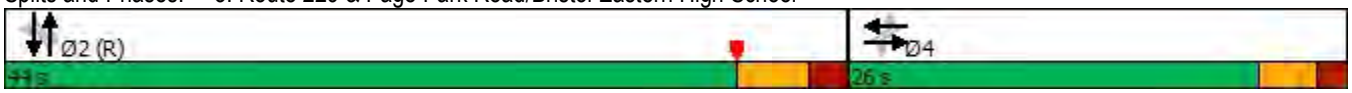
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	0	20	60	0	15	10	659	35	20	676	5
Future Volume (vph)	10	0	20	60	0	15	10	659	35	20	676	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.910			0.973			0.992			0.999	
Flt Protected		0.984			0.961		0.950			0.950		
Satd. Flow (prot)	0	1668	0	0	1742	0	1770	1848	0	1770	1861	0
Flt Permitted		0.894			0.746		0.331			0.323		
Satd. Flow (perm)	0	1515	0	0	1352	0	617	1848	0	602	1861	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45			45			6			1	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		480			517			662			899	
Travel Time (s)		10.9			11.8			12.9			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	0	22	65	0	16	11	716	38	22	735	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	81	0	11	754	0	22	740	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	28.7	28.7		28.7	28.7		45.0	45.0		45.0	45.0	
Total Split (s)	26.0	26.0		26.0	26.0		44.0	44.0		44.0	44.0	
Total Split (%)	37.1%	37.1%		37.1%	37.1%		62.9%	62.9%		62.9%	62.9%	
Maximum Green (s)	21.3	21.3		21.3	21.3		38.1	38.1		38.1	38.1	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.8	3.8		3.8	3.8	
All-Red Time (s)	1.7	1.7		1.7	1.7		2.1	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.7			4.7		5.9	5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		2	2		2	2	
Act Effct Green (s)		10.1			10.1		53.4	53.4		53.4	53.4	
Actuated g/C Ratio		0.14			0.14		0.76	0.76		0.76	0.76	
v/c Ratio		0.13			0.35		0.02	0.53		0.05	0.52	
Control Delay		8.2			19.4		2.9	4.7		2.8	4.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		8.2			19.4		2.9	4.7		2.8	4.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A			B		A	A		A	A	
Approach Delay		8.2			19.4			4.7			4.6	
Approach LOS		A			B			A			A	
Queue Length 50th (ft)		0			14		1	129		2	96	
Queue Length 95th (ft)		18			50		m2	89		m5	95	
Internal Link Dist (ft)		400			437			582			819	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		492			442		471	1412		459	1421	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.07			0.18		0.02	0.53		0.05	0.52	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 5.5 Intersection LOS: A
Intersection Capacity Utilization 54.7% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Route 229 & Page Park Road/Bristol Eastern High School



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	7	703	707	54	7	16
Future Volume (vph)	7	703	707	54	7	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.990		0.908	
Flt Protected		0.999			0.984	
Satd. Flow (prot)	0	1861	1844	0	1664	0
Flt Permitted		0.993			0.984	
Satd. Flow (perm)	0	1850	1844	0	1664	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			9		17	
Link Speed (mph)		35	35		30	
Link Distance (ft)		1271	662		359	
Travel Time (s)		24.8	12.9		8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	764	768	59	8	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	772	827	0	25	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	2		4	
Permitted Phases	2					
Detector Phase	2	2	2		4	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0		10.0	
Minimum Split (s)	37.0	37.0	37.0		24.5	
Total Split (s)	45.0	45.0	45.0		25.0	
Total Split (%)	64.3%	64.3%	64.3%		35.7%	
Maximum Green (s)	40.0	40.0	40.0		21.0	
Yellow Time (s)	4.0	4.0	4.0		3.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		5.0	5.0		4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	5.0	5.0	5.0		3.0	
Recall Mode	C-Min	C-Min	C-Min		None	
Walk Time (s)	24.0	24.0	24.0			
Flash Dont Walk (s)	2.0	2.0	2.0			
Pedestrian Calls (#/hr)	0	0	0			
Act Effct Green (s)		62.4	62.4		10.0	
Actuated g/C Ratio		0.89	0.89		0.14	
v/c Ratio		0.47	0.50		0.10	
Control Delay		3.6	3.0		16.9	
Queue Delay		0.0	0.0		0.0	
Total Delay		3.6	3.0		16.9	
LOS		A	A		B	
Approach Delay		3.6	3.0		16.9	
Approach LOS		A	A		B	

Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Queue Length 50th (ft)		0	1		3	
Queue Length 95th (ft)		193	168		23	
Internal Link Dist (ft)		1191	582		279	
Turn Bay Length (ft)						
Base Capacity (vph)		1649	1644		511	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.47	0.50		0.05	

Intersection Summary	
Area Type: Other	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 3.5	Intersection LOS: A
Intersection Capacity Utilization 58.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Woodland Street & Route 229

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	45	40	30	1122	1657	80
Future Volume (vph)	45	40	30	1122	1657	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.937				0.993	
Flt Protected	0.974			0.999		
Satd. Flow (prot)	1700	0	0	3536	3514	0
Flt Permitted	0.974			0.855		
Satd. Flow (perm)	1700	0	0	3026	3514	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	12				13	
Link Speed (mph)	30			30	30	
Link Distance (ft)	832			624	268	
Travel Time (s)	18.9			14.2	6.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	43	33	1220	1801	87
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	0	0	1253	1888	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	22.5		22.5	22.5	22.5	
Total Split (s)	22.5		37.5	37.5	37.5	
Total Split (%)	37.5%		62.5%	62.5%	62.5%	
Maximum Green (s)	18.0		33.0	33.0	33.0	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	4.5			4.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		C-Max	C-Max	C-Max	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	8.3			45.6	45.6	
Actuated g/C Ratio	0.14			0.76	0.76	
v/c Ratio	0.38			0.55	0.71	
Control Delay	24.7			12.8	7.4	
Queue Delay	0.0			0.0	0.0	
Total Delay	24.7			12.8	7.4	
LOS	C			B	A	
Approach Delay	24.7			12.8	7.4	
Approach LOS	C			B	A	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 50th (ft)	27			175	165	
Queue Length 95th (ft)	60			m160	308	
Internal Link Dist (ft)	752			544	188	
Turn Bay Length (ft)						
Base Capacity (vph)	518			2299	2673	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.18			0.55	0.71	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 10.0	Intersection LOS: A
Intersection Capacity Utilization 65.0%	ICU Level of Service C
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 8: Route 229 & Vincent P. Kelly Rd

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	167	39	671	103	159	704
Future Volume (vph)	167	39	671	103	159	704
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	160	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.975		0.982			
Flt Protected	0.961				0.950	
Satd. Flow (prot)	1745	0	1829	0	1770	1863
Flt Permitted	0.961				0.950	
Satd. Flow (perm)	1745	0	1829	0	1770	1863
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	11		12			
Link Speed (mph)	30		35			35
Link Distance (ft)	835		2121			1598
Travel Time (s)	19.0		41.3			31.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	182	42	729	112	173	765
Shared Lane Traffic (%)						
Lane Group Flow (vph)	224	0	841	0	173	765
Turn Type	Prot		NA		Prot	NA
Protected Phases	4		2		1	1 2
Permitted Phases						
Detector Phase	4		2		1	1 2
Switch Phase						
Minimum Initial (s)	9.0		15.0		5.0	
Minimum Split (s)	25.0		37.9		9.0	
Total Split (s)	25.0		58.0		17.0	
Total Split (%)	25.0%		58.0%		17.0%	
Maximum Green (s)	21.0		52.1		13.0	
Yellow Time (s)	3.0		4.0		3.0	
All-Red Time (s)	1.0		1.9		1.0	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	4.0		5.9		4.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		4.0		1.0	
Recall Mode	None		C-Min		None	
Walk Time (s)	17.0		22.0			
Flash Dont Walk (s)	4.0		4.0			
Pedestrian Calls (#/hr)	0		0			
Act Effct Green (s)	16.1		55.5		14.4	75.9
Actuated g/C Ratio	0.16		0.56		0.14	0.76
v/c Ratio	0.77		0.82		0.68	0.54
Control Delay	55.4		25.7		55.2	7.3
Queue Delay	0.0		0.0		0.0	0.0
Total Delay	55.4		25.7		55.2	7.3

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS	E		C		E	A
Approach Delay	55.4		25.7			16.1
Approach LOS	E		C			B
Queue Length 50th (ft)	131		446		102	168
Queue Length 95th (ft)	203		#508		#211	299
Internal Link Dist (ft)	755		2041			1518
Turn Bay Length (ft)					160	
Base Capacity (vph)	375		1020		262	1405
Starvation Cap Reductn	0		0		0	0
Spillback Cap Reductn	0		0		0	0
Storage Cap Reductn	0		0		0	0
Reduced v/c Ratio	0.60		0.82		0.66	0.54

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 24.5 Intersection LOS: C
Intersection Capacity Utilization 73.6% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Route 229 & West Washington Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	127	35	694	236	40	771
Future Volume (vph)	127	35	694	236	40	771
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	490	325		130	220	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	1583	3539	1583	1770	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		38		257		
Link Speed (mph)	30		30			30
Link Distance (ft)	911		424			459
Travel Time (s)	20.7		9.6			10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	138	38	754	257	43	838
Shared Lane Traffic (%)						
Lane Group Flow (vph)	138	38	754	257	43	838
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4	2	4	1	1 2
Permitted Phases				2		
Detector Phase	4	4	2	4	1	1 2
Switch Phase						
Minimum Initial (s)	6.0	6.0	15.0	6.0	6.0	
Minimum Split (s)	25.0	25.0	20.9	25.0	10.9	
Total Split (s)	30.0	30.0	55.0	30.0	15.0	
Total Split (%)	30.0%	30.0%	55.0%	30.0%	15.0%	
Maximum Green (s)	26.0	26.0	49.1	26.0	10.1	
Yellow Time (s)	3.0	3.0	4.9	3.0	3.3	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	5.9	4.0	4.9	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	3.0	2.0	3.0	
Recall Mode	None	None	C-Min	None	None	
Walk Time (s)	1.0	1.0		1.0		
Flash Dont Walk (s)	20.0	20.0		20.0		
Pedestrian Calls (#/hr)	0	0		0		
Act Effct Green (s)	8.5	8.5	62.5	76.9	14.2	82.6
Actuated g/C Ratio	0.08	0.08	0.62	0.77	0.14	0.83
v/c Ratio	0.48	0.23	0.34	0.20	0.17	0.29
Control Delay	48.8	16.7	10.3	0.9	31.4	3.2
Queue Delay	0.0	0.0	0.5	0.0	0.0	0.0
Total Delay	48.8	16.7	10.7	0.9	31.4	3.2

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS	D	B	B	A	C	A
Approach Delay	41.9		8.2			4.6
Approach LOS	D		A			A
Queue Length 50th (ft)	44	0	108	0	21	31
Queue Length 95th (ft)	72	30	181	20	m40	142
Internal Link Dist (ft)	831		344			379
Turn Bay Length (ft)	490	325		130	220	
Base Capacity (vph)	892	439	2211	1504	253	2893
Starvation Cap Reductn	0	0	918	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.09	0.58	0.17	0.17	0.29

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 86 (86%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 9.5 Intersection LOS: A
Intersection Capacity Utilization 41.5% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Route 229 & Broad Street

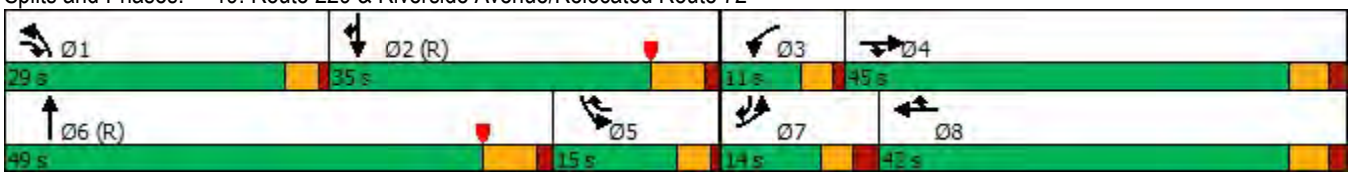
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	480	391	5	510	112	277	675	20	76	675	149
Future Volume (vph)	139	480	391	5	510	112	277	675	20	76	675	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	525		765	65		300	400		0	200		275
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	150			135			90			75		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850			0.850		0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	1770	3539	1583	1770	3525	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1863	1583	1770	3539	1583	1770	3525	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			247			104		3				124
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		918			774			907			424	
Travel Time (s)		20.9			17.6			20.6			9.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	151	522	425	5	554	122	301	734	22	83	734	162
Shared Lane Traffic (%)												
Lane Group Flow (vph)	151	522	425	5	554	122	301	756	0	83	734	162
Turn Type	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA		Prot	NA	pt+ov
Protected Phases	7	4	4 1	3	8	5 8	1	6		5	2	2 7
Permitted Phases												
Detector Phase	7	4	4 1	3	8	5 8	1	6		5	2	2 7
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	15.0		6.0	15.0	
Minimum Split (s)	11.2	28.4		10.0	28.4		10.0	21.4		10.0	21.4	
Total Split (s)	14.0	45.0		11.0	42.0		29.0	49.0		15.0	35.0	
Total Split (%)	11.7%	37.5%		9.2%	35.0%		24.2%	40.8%		12.5%	29.2%	
Maximum Green (s)	8.8	39.6		7.0	36.6		25.0	42.6		11.0	28.6	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	4.9		3.0	4.9	
All-Red Time (s)	2.2	1.7		1.0	1.7		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.4		4.0	5.4		4.0	6.4		4.0	6.4	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		22.0			22.0							
Flash Dont Walk (s)		1.0			1.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	8.3	38.1	66.9	6.0	26.6	48.8	24.8	43.3		20.8	39.3	52.8
Actuated g/C Ratio	0.07	0.32	0.56	0.05	0.22	0.41	0.21	0.36		0.17	0.33	0.44
v/c Ratio	0.64	0.88	0.43	0.06	0.71	0.17	0.82	0.59		0.27	0.63	0.21
Control Delay	66.9	56.0	6.5	55.8	47.6	4.0	79.8	44.9		47.7	39.6	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.9	0.0
Total Delay	66.9	56.0	6.5	55.8	47.6	4.0	79.8	44.9		47.7	40.5	8.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	E	A	E	D	A	E	D		D	D	A
Approach Delay		38.4			39.8			54.9			35.7	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	59	373	60	4	211	6	244	252		55	260	17
Queue Length 95th (ft)	95	#548	128	18	242	32	m#318	254		114	#388	67
Internal Link Dist (ft)		838			694			827			344	
Turn Bay Length (ft)	525		765	65		300	400			200		275
Base Capacity (vph)	251	631	1006	103	1079	828	391	1303		306	1157	771
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	184	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.60	0.83	0.42	0.05	0.51	0.15	0.77	0.58		0.27	0.75	0.21

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 42.5 Intersection LOS: D
Intersection Capacity Utilization 80.8% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Route 229 & Riverside Avenue/Relocated Route 72



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	630	458	228	210	113	238	742	196	77	1178	62
Future Volume (vph)	120	630	458	228	210	113	238	742	196	77	1178	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	240		240	400		0	300		75
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (ft)	150			150			70			90		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.937			0.947			0.969			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3316	0	1770	3352	0	1770	3429	0	3433	3514	0
Flt Permitted	0.541			0.081			0.000			0.143		
Satd. Flow (perm)	1008	3316	0	151	3352	0	0	3429	0	517	3514	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			99			31			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		669			802			666			907	
Travel Time (s)		15.2			18.2			15.1			20.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	685	498	248	228	123	259	807	213	84	1280	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	1183	0	248	351	0	259	1020	0	84	1347	0
Turn Type	pm+pt	NA		pm+pt	NA		D.P+P	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1 2!	2 5!		1!	5!	
Permitted Phases	4			8			5			5		
Detector Phase	7	4		3	8		1 2	2 5		1	5	
Switch Phase												
Minimum Initial (s)	4.0	7.0		4.0	7.0					4.0	15.0	
Minimum Split (s)	8.2	54.0		8.0	54.0					8.0	22.3	
Total Split (s)	16.0	54.0		16.0	54.0					8.0	50.0	
Total Split (%)	13.3%	45.0%		13.3%	45.0%					6.7%	41.7%	
Maximum Green (s)	11.8	48.0		12.0	48.0					4.0	42.7	
Yellow Time (s)	3.2	3.8		3.0	3.8					3.0	4.9	
All-Red Time (s)	1.0	2.2		1.0	2.2					1.0	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)	4.2	6.0		4.0	6.0					4.0	7.3	
Lead/Lag	Lead	Lag		Lead	Lag					Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0					2.0	3.0	
Recall Mode	None	None		None	None					None	C-Min	
Walk Time (s)		37.0			37.0							
Flash Dont Walk (s)		4.0			4.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	56.7	46.1		62.7	49.1		47.9	44.6		47.9	44.6	
Actuated g/C Ratio	0.47	0.38		0.52	0.41		0.40	0.37		0.40	0.37	
v/c Ratio	0.24	0.92		1.03	0.25		0.37	0.79		0.24	1.03	
Control Delay	15.1	46.0		97.9	16.8		27.1	37.5		37.3	78.5	
Queue Delay	0.0	2.2		8.6	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.1	48.2		106.5	16.8		27.1	37.5		37.3	78.5	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	22.3
Total Split (s)	42.0
Total Split (%)	35%
Maximum Green (s)	34.7
Yellow Time (s)	4.9
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Min
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	B	D		F	B		C	D		D	E	
Approach Delay		44.9			54.0			35.4			76.1	
Approach LOS		D			D			D			E	
Queue Length 50th (ft)	47	432		~148	62		151	375		25	~604	
Queue Length 95th (ft)	80	#534		#323	100		227	463		m48	#762	
Internal Link Dist (ft)		589			722			586			827	
Turn Bay Length (ft)	200			240			400			300		
Base Capacity (vph)	576	1343		240	1438		706	1294		345	1309	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	73		6	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.23	0.93		1.06	0.24		0.37	0.79		0.24	1.03	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 5:NBSB, Start of Yellow
Natural Cycle: 125
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 53.1 Intersection LOS: D
Intersection Capacity Utilization 110.2% ICU Level of Service H
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

! Phase conflict between lane groups.

Splits and Phases: 20: Route 229 & Mountain Road/Pine Street

Lane Group	Ø2
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

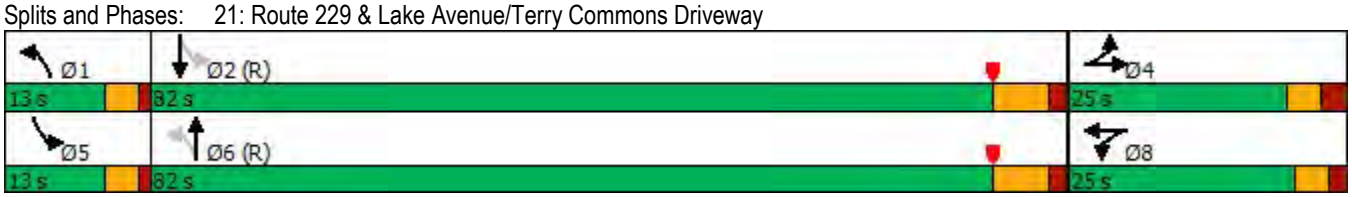
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	20	18	8	0	5	16	1052	31	10	1841	130
Future Volume (vph)	120	20	18	8	0	5	16	1052	31	10	1841	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	130		0	70		0	55		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			25			50			70		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.965			0.850			0.996			0.990	
Flt Protected	0.950	0.975		0.950			0.950			0.950		
Satd. Flow (prot)	1681	1665	0	1770	1583	0	1770	3525	0	1770	3504	0
Flt Permitted	0.950	0.975		0.950			0.048			0.221		
Satd. Flow (perm)	1681	1665	0	1770	1583	0	89	3525	0	412	3504	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			203			5			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		650			212			757			666	
Travel Time (s)		14.8			4.8			17.2			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	22	20	9	0	5	17	1143	34	11	2001	141
Shared Lane Traffic (%)	33%											
Lane Group Flow (vph)	87	85	0	9	5	0	17	1177	0	11	2142	0
Turn Type	Split	NA		Split	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	4!	4!		8!	8!		1	6		5	2	
Permitted Phases							6			2		
Detector Phase	4	4		8	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		9.0	45.0		9.0	45.0	
Total Split (s)	25.0	25.0		25.0	25.0		13.0	82.0		13.0	82.0	
Total Split (%)	20.8%	20.8%		20.8%	20.8%		10.8%	68.3%		10.8%	68.3%	
Maximum Green (s)	19.5	19.5		20.2	20.2		9.0	75.3		9.0	75.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	4.9		3.0	4.9	
All-Red Time (s)	2.5	2.5		1.8	1.8		1.0	1.8		1.0	1.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		4.8	4.8		4.0	6.7		4.0	6.7	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)	15.0	15.0		15.0	15.0			31.0			31.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	10.6	10.6		11.3	11.3		98.9	95.2		98.6	93.6	
Actuated g/C Ratio	0.09	0.09		0.09	0.09		0.82	0.79		0.82	0.78	
v/c Ratio	0.59	0.54		0.05	0.02		0.12	0.42		0.03	0.78	
Control Delay	67.8	57.5		47.8	0.0		4.0	5.1		3.2	12.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	1.3	
Total Delay	67.8	57.5		47.8	0.0		4.0	5.1		3.2	14.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	E		D	A		A	A		A	B	
Approach Delay		62.7			30.7			5.1			14.0	
Approach LOS		E			C			A			B	
Queue Length 50th (ft)	69	58		6	0		2	107		2	354	
Queue Length 95th (ft)	122	110		22	0		7	245		m2	m481	
Internal Link Dist (ft)		570			132			677			586	
Turn Bay Length (ft)	200			130			70			55		
Base Capacity (vph)	273	279		297	435		200	2798		444	2735	
Starvation Cap Reductn	0	0		0	0		0	0		0	362	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.32	0.30		0.03	0.01		0.09	0.42		0.02	0.90	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 13.4 Intersection LOS: B
Intersection Capacity Utilization 76.3% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.
! Phase conflict between lane groups.

Splits and Phases: 21: Route 229 & Lake Avenue/Terry Commons Driveway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	10	75	49	5	49	70	981	63	108	1539	50
Future Volume (vph)	45	10	75	49	5	49	70	981	63	108	1539	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		175	60		0	180		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			75			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.922				0.850		0.991			0.995	
Flt Protected		0.983			0.956		0.950			0.950		
Satd. Flow (prot)	0	1688	0	0	1781	1583	1770	3507	0	1770	3522	0
Flt Permitted		0.862			0.508		0.078			0.187		
Satd. Flow (perm)	0	1480	0	0	946	1583	145	3507	0	348	3522	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		62				86		11			5	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		674			483			840			981	
Travel Time (s)		15.3			11.0			14.3			22.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	11	82	53	5	53	76	1066	68	117	1673	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	142	0	0	58	53	76	1134	0	117	1727	0
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		7			4 7		5	2		1	6	
Permitted Phases	7			4 7		4 7	2			6		
Detector Phase	7	7		4 7	4 7	4 7	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0					5.0	15.0		5.0	15.0	
Minimum Split (s)	10.8	10.8					9.0	21.1		9.0	24.1	
Total Split (s)	16.0	16.0					11.0	53.0		11.0	53.0	
Total Split (%)	17.8%	17.8%					12.2%	58.9%		12.2%	58.9%	
Maximum Green (s)	10.2	10.2					7.0	46.9		7.0	46.9	
Yellow Time (s)	3.0	3.0					3.0	4.2		3.0	4.2	
All-Red Time (s)	2.8	2.8					1.0	1.9		1.0	1.9	
Lost Time Adjust (s)		0.0					0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.8					4.0	6.1		4.0	6.1	
Lead/Lag	Lag	Lag					Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes										
Vehicle Extension (s)	2.0	2.0					2.0	0.2		2.0	0.2	
Recall Mode	None	None					None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0									7.0	
Flash Dont Walk (s)	11.0	11.0									11.0	
Pedestrian Calls (#/hr)	0	0									0	
Act Effct Green (s)		8.5			18.3	18.3	60.2	53.2		60.9	53.6	
Actuated g/C Ratio		0.09			0.20	0.20	0.67	0.59		0.68	0.60	
v/c Ratio		0.73			0.30	0.14	0.38	0.55		0.35	0.82	
Control Delay		44.7			32.7	3.2	12.2	14.0		8.1	21.4	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		44.7			32.7	3.2	12.2	14.0		8.1	21.4	

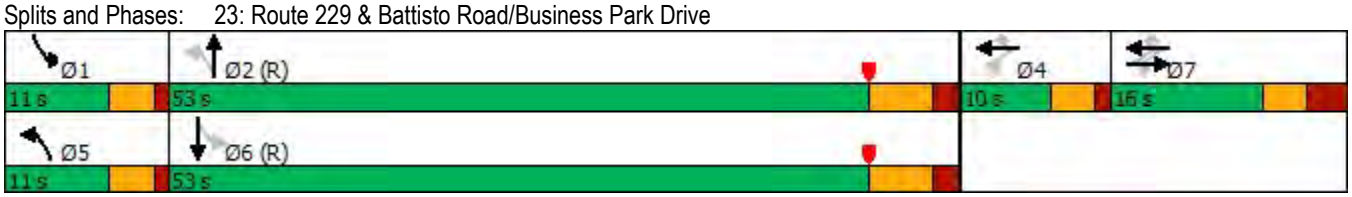
Lane Group	Ø4
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	4
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	3.9
Minimum Split (s)	9.0
Total Split (s)	10.0
Total Split (%)	11%
Maximum Green (s)	6.0
Yellow Time (s)	3.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		D			C	A	B	B		A	C	
Approach Delay		44.7			18.6			13.9			20.5	
Approach LOS		D			B			B			C	
Queue Length 50th (ft)		44			27	0	13	218		20	437	
Queue Length 95th (ft)		#119			61	13	34	290		39	#644	
Internal Link Dist (ft)		594			403			760			901	
Turn Bay Length (ft)						175	60			180		
Base Capacity (vph)		222			210	418	224	2077		347	2098	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.64			0.28	0.13	0.34	0.55		0.34	0.82	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 19.1 Intersection LOS: B
Intersection Capacity Utilization 75.8% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 23: Route 229 & Battisto Road/Business Park Drive



Lane Group	Ø4
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	80	77	88	140	15	31	966	69	325	1322	96
Future Volume (vph)	139	80	77	88	140	15	31	966	69	325	1322	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	14	12
Storage Length (ft)	125		0	160		0	160		0	235		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			100			250		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.926			0.986			0.990			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1725	0	1770	1837	0	1770	3504	0	1770	3737	0
Flt Permitted	0.651			0.649			0.234			0.234		
Satd. Flow (perm)	1213	1725	0	1209	1837	0	436	3504	0	436	3737	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			9			12			19	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		744			601			1500			624	
Travel Time (s)		16.9			13.7			25.6			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	151	87	84	96	152	16	34	1050	75	353	1437	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	151	171	0	96	168	0	34	1125	0	353	1541	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4			2			1 2		
Detector Phase	4	4		4	4		2	2		1	1 2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		5.0		
Minimum Split (s)	29.3	29.3		29.3	29.3		23.3	23.3		9.0		
Total Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		12.0		
Total Split (%)	40.0%	40.0%		40.0%	40.0%		40.0%	40.0%		20.0%		
Maximum Green (s)	18.7	18.7		18.7	18.7		15.7	15.7		8.0		
Yellow Time (s)	3.6	3.6		3.6	3.6		4.3	4.3		3.0		
All-Red Time (s)	1.7	1.7		1.7	1.7		4.0	4.0		1.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		
Total Lost Time (s)	5.3	5.3		5.3	5.3		8.3	8.3		4.0		
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		1.0		
Recall Mode	None	None		None	None		C-Max	C-Max		None		
Walk Time (s)	23.0	23.0		23.0	23.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	12.6	12.6		12.6	12.6		17.1	17.1		34.1	38.1	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.28	0.28		0.57	0.64	
v/c Ratio	0.59	0.45		0.38	0.43		0.27	1.12		0.67	0.65	
Control Delay	30.1	19.6		23.0	21.5		15.3	81.7		22.0	6.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	30.1	19.6		23.0	21.5		15.3	81.7		22.0	6.5	
LOS	C	B		C	C		B	F		C	A	
Approach Delay		24.5			22.1			79.8			9.4	
Approach LOS		C			C			E			A	
Queue Length 50th (ft)	50	45		30	50		4	~254		61	80	
Queue Length 95th (ft)	88	81		58	85		m14	#374		m#187	142	
Internal Link Dist (ft)		664			521			1420			544	
Turn Bay Length (ft)	125			160			160			235		
Base Capacity (vph)	378	556		376	578		124	1008		530	2381	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.40	0.31		0.26	0.29		0.27	1.12		0.67	0.65	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 53 (88%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 34.1 Intersection LOS: C
Intersection Capacity Utilization 87.2% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Route 229 & Cross Street/Redstone Hill Road

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	85	50	50	993	1354	205
Future Volume (vph)	85	50	50	993	1354	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12
Grade (%)	0%			6%	0%	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850			0.980	
Flt Protected	0.950			0.998		
Satd. Flow (prot)	1770	1794	0	3426	3468	0
Flt Permitted	0.950			0.766		
Satd. Flow (perm)	1770	1794	0	2630	3468	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		18			39	
Link Speed (mph)	30			40	40	
Link Distance (ft)	411			1591	1500	
Travel Time (s)	9.3			27.1	25.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	54	54	1079	1472	223
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	54	0	1133	1695	0
Turn Type	Prot	Prot	Perm	NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases			2		2	
Detector Phase	4	4	2	2	2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	15.0	15.0	15.0	
Minimum Split (s)	20.4	20.4	22.6	22.6	22.6	
Total Split (s)	23.0	23.0	37.0	37.0	37.0	
Total Split (%)	38.3%	38.3%	61.7%	61.7%	61.7%	
Maximum Green (s)	18.6	18.6	29.4	29.4	29.4	
Yellow Time (s)	3.0	3.0	4.4	4.4	4.4	
All-Red Time (s)	1.4	1.4	3.2	3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.4	4.4		7.6	7.6	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	0.2	0.2	0.2	
Recall Mode	None	None	C-Min	C-Min	C-Min	
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	6.9	6.9		44.5	44.5	
Actuated g/C Ratio	0.12	0.12		0.74	0.74	
v/c Ratio	0.45	0.24		0.58	0.66	
Control Delay	31.4	19.9		4.6	3.9	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	31.4	19.9		4.6	3.9	
LOS	C	B		A	A	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach Delay	27.2			4.6	3.9	
Approach LOS	C			A	A	
Queue Length 50th (ft)	32	12		45	9	
Queue Length 95th (ft)	67	38		69	31	
Internal Link Dist (ft)	331			1511	1420	
Turn Bay Length (ft)						
Base Capacity (vph)	548	568		1950	2582	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.17	0.10		0.58	0.66	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 31 (52%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 5.3	Intersection LOS: A
Intersection Capacity Utilization 79.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 27: Route 229 & Enterprise Dr North

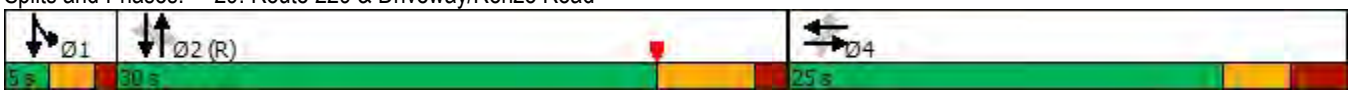
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	325	0	45	0	1013	212	75	1264	0
Future Volume (vph)	0	0	0	325	0	45	0	1013	212	75	1264	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			7%			6%	
Storage Length (ft)	0		0	0		300	280		130	165		165
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt						0.850			0.850			
Flt Protected					0.950					0.950		
Satd. Flow (prot)	0	1863	0	0	1770	1583	1798	3415	1528	1717	3433	0
Flt Permitted					0.757					0.166		
Satd. Flow (perm)	0	1863	0	0	1410	1583	1798	3415	1528	300	3433	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						107			230			
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		261			414			713			1591	
Travel Time (s)		5.9			9.4			12.2			27.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	353	0	49	0	1101	230	82	1374	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	353	49	0	1101	230	82	1374	0
Turn Type				Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4		4	2		2	1 2		
Detector Phase	4	4		4	4	4	2	2	2	1	1 2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	15.0	15.0	15.0	5.0		
Minimum Split (s)	30.6	30.6		30.6	30.6	30.6	32.9	32.9	32.9	9.0		
Total Split (s)	25.0	25.0		25.0	25.0	25.0	30.0	30.0	30.0	5.0		
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	50.0%	50.0%	50.0%	8.3%		
Maximum Green (s)	19.4	19.4		19.4	19.4	19.4	24.1	24.1	24.1	2.0		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.4	4.4	4.4	2.0		
All-Red Time (s)	2.6	2.6		2.6	2.6	2.6	1.5	1.5	1.5	1.0		
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		5.6			5.6	5.6	5.9	5.9	5.9	3.0		
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	0.2	0.2	0.2	1.0		
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None		
Walk Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0			
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0			
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0			
Act Effct Green (s)					17.1	17.1		24.1	24.1	31.3	34.3	
Actuated g/C Ratio					0.28	0.28		0.40	0.40	0.52	0.57	
v/c Ratio					0.88	0.09		0.80	0.31	0.32	0.70	
Control Delay					44.5	1.0		16.3	1.4	7.2	11.1	
Queue Delay					0.0	0.0		0.0	0.0	0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					44.5	1.0		16.3	1.4	7.2	11.1	
LOS					D	A		B	A	A	B	
Approach Delay					39.2			13.7			10.8	
Approach LOS					D			B			B	
Queue Length 50th (ft)					114	0		181	1	11	250	
Queue Length 95th (ft)					#238	4		#111	7	m10	273	
Internal Link Dist (ft)		181			334			633			1511	
Turn Bay Length (ft)						300			130	165		
Base Capacity (vph)					455	584		1371	751	256	1960	
Starvation Cap Reductn					0	0		0	0	0	0	
Spillback Cap Reductn					0	0		0	0	0	0	
Storage Cap Reductn					0	0		0	0	0	0	
Reduced v/c Ratio					0.78	0.08		0.80	0.31	0.32	0.70	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 15.6 Intersection LOS: B
Intersection Capacity Utilization 78.4% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 29: Route 229 & Driveway/Ronzo Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	39	119	228	1187	1545	43
Future Volume (vph)	39	119	228	1187	1545	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			7%	7%	
Storage Length (ft)	0	0	745			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.996	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1708	3415	3402	0
Flt Permitted	0.950		0.122			
Satd. Flow (perm)	1770	1583	219	3415	3402	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)					4	
Link Speed (mph)	30			40	40	
Link Distance (ft)	703			1424	713	
Travel Time (s)	16.0			24.3	12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	129	248	1290	1679	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	42	129	248	1290	1726	0
Turn Type	Prot	pt+ov	pm+pt	NA	NA	
Protected Phases	8	8 5	5	2	6	
Permitted Phases			2			
Detector Phase	8	8 5	5	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	24.0		9.0	32.7	21.7	
Total Split (s)	24.0		16.0	36.0	20.0	
Total Split (%)	40.0%		26.7%	60.0%	33.3%	
Maximum Green (s)	20.0		12.0	29.3	13.3	
Yellow Time (s)	3.0		3.0	4.4	4.4	
All-Red Time (s)	1.0		1.0	2.3	2.3	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0		4.0	6.7	6.7	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	C-Min	C-Min	
Walk Time (s)	15.0			15.0		
Flash Dont Walk (s)	5.0			11.0		
Pedestrian Calls (#/hr)	0			0		
Act Effct Green (s)	9.0	19.5	45.0	43.7	29.8	
Actuated g/C Ratio	0.15	0.32	0.75	0.73	0.50	
v/c Ratio	0.16	0.25	0.66	0.52	1.02	
Control Delay	22.6	13.6	17.0	6.0	41.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	

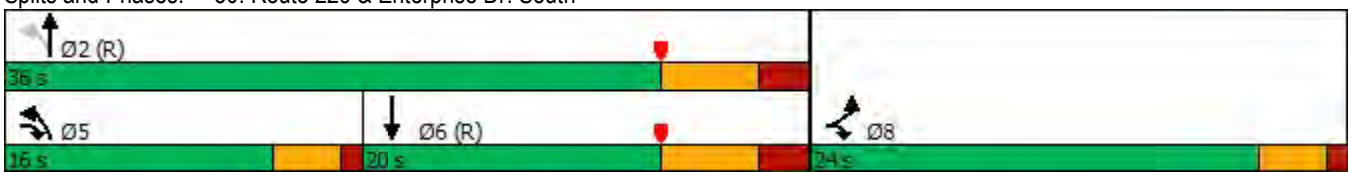
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Delay	22.6	13.6	17.0	6.0	41.6	
LOS	C	B	B	A	D	
Approach Delay	15.8			7.8	41.6	
Approach LOS	B			A	D	
Queue Length 50th (ft)	13	32	30	104	~358	
Queue Length 95th (ft)	35	54	99	176	#572	
Internal Link Dist (ft)	623			1344	633	
Turn Bay Length (ft)			745			
Base Capacity (vph)	590	647	462	2486	1690	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.07	0.20	0.54	0.52	1.02	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 25.2	Intersection LOS: C
Intersection Capacity Utilization 73.1%	ICU Level of Service D
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 30: Route 229 & Enterprise Dr. South



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	50	1325	35	100	1584
Future Volume (vph)	10	50	1325	35	100	1584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			7%
Storage Length (ft)	0	0		105	95	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3539	1583	1708	3415
Flt Permitted	0.950				0.089	
Satd. Flow (perm)	1770	1583	3539	1583	160	3415
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		54		18		
Link Speed (mph)	30		40			40
Link Distance (ft)	370		539			1424
Travel Time (s)	8.4		9.2			24.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	54	1440	38	109	1722
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	54	1440	38	109	1722
Turn Type	Prot	Prot	NA	Prot	pm+pt	NA
Protected Phases	4	4	2	2	1	1 2
Permitted Phases					1 2	
Detector Phase	4	4	2	2	1	1 2
Switch Phase						
Minimum Initial (s)	5.0	5.0	14.0	14.0	4.0	
Minimum Split (s)	22.1	22.1	20.8	20.8	8.0	
Total Split (s)	21.0	21.0	46.0	46.0	23.0	
Total Split (%)	23.3%	23.3%	51.1%	51.1%	25.6%	
Maximum Green (s)	16.9	16.9	39.2	39.2	19.0	
Yellow Time (s)	3.0	3.0	4.4	4.4	3.0	
All-Red Time (s)	1.1	1.1	2.4	2.4	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.1	4.1	6.8	6.8	4.0	
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	5.0	5.0	2.0	
Recall Mode	None	None	C-Min	C-Min	None	
Walk Time (s)	17.0	17.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	5.7	5.7	48.0	48.0	74.0	78.8
Actuated g/C Ratio	0.06	0.06	0.53	0.53	0.82	0.88
v/c Ratio	0.10	0.36	0.76	0.04	0.21	0.58
Control Delay	40.8	18.5	21.7	6.7	4.6	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	40.8	18.5	21.7	6.7	4.6	2.9
LOS	D	B	C	A	A	A
Approach Delay	22.2		21.4			3.0
Approach LOS	C		C			A
Queue Length 50th (ft)	6	0	460	3	6	91
Queue Length 95th (ft)	22	35	#548	m6	33	164
Internal Link Dist (ft)	290		459			1344
Turn Bay Length (ft)				105	95	
Base Capacity (vph)	332	341	1887	852	558	2989
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.16	0.76	0.04	0.20	0.58

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 11.4	Intersection LOS: B
Intersection Capacity Utilization 58.7%	ICU Level of Service B
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

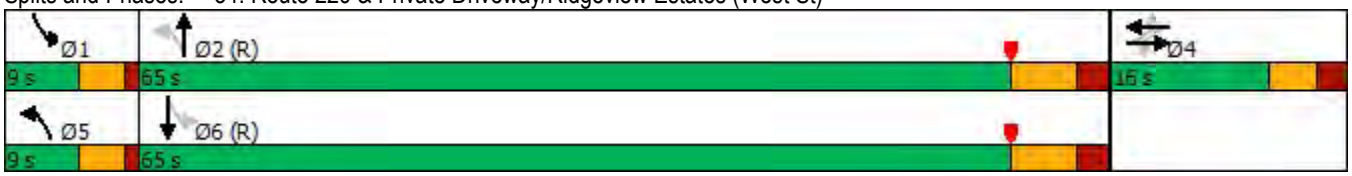
Splits and Phases: 31: Route 229 & ESPN Drive

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	0	60	20	0	0	69	1336	5	5	1513	79
Future Volume (vph)	55	0	60	20	0	0	69	1336	5	5	1513	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		50	0		120	120		0	150		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	25			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.850						0.999			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1863	0	1770	3536	0	1770	3514	0
Flt Permitted	0.757			0.715			0.086			0.157		
Satd. Flow (perm)	1410	1583	0	1332	1863	0	160	3536	0	292	3514	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		119						1			12	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		299			498			1447			922	
Travel Time (s)		6.8			11.3			24.7			15.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	0	65	22	0	0	75	1452	5	5	1645	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	65	0	22	0	0	75	1457	0	5	1731	0
Turn Type	Perm	NA		Perm			pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4			2			6		
Detector Phase	4	4		4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	13.4	13.4		13.4	13.4		9.0	21.6		9.0	21.6	
Total Split (s)	16.0	16.0		16.0	16.0		9.0	65.0		9.0	65.0	
Total Split (%)	17.8%	17.8%		17.8%	17.8%		10.0%	72.2%		10.0%	72.2%	
Maximum Green (s)	10.6	10.6		10.6	10.6		5.0	58.4		5.0	58.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.1	2.1		2.1	2.1		1.0	2.2		1.0	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	5.4		5.4	5.4		4.0	6.6		4.0	6.6	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	0.2		1.5	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	8.8	8.8		8.8			73.7	71.4		71.3	66.0	
Actuated g/C Ratio	0.10	0.10		0.10			0.82	0.79		0.79	0.73	
v/c Ratio	0.43	0.25		0.17			0.34	0.52		0.02	0.67	
Control Delay	48.2	3.5		39.9			8.6	11.2		2.4	8.1	
Queue Delay	0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Delay	48.2	3.5		39.9			8.6	11.2		2.4	8.1	
LOS	D	A		D			A	B		A	A	
Approach Delay		24.9			39.9			11.0			8.1	
Approach LOS		C			D			B			A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	33	0		12			13	268		1	194	
Queue Length 95th (ft)	71	8		34			m20	m366		m1	218	
Internal Link Dist (ft)		219			418			1367			842	
Turn Bay Length (ft)	50						120			150		
Base Capacity (vph)	166	291		156			220	2805		313	2579	
Starvation Cap Reductn	0	0		0			0	0		0	0	
Spillback Cap Reductn	0	0		0			0	0		0	0	
Storage Cap Reductn	0	0		0			0	0		0	0	
Reduced v/c Ratio	0.36	0.22		0.14			0.34	0.52		0.02	0.67	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 10.2	Intersection LOS: B
Intersection Capacity Utilization 71.6%	ICU Level of Service C
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 34: Route 229 & Private Driveway/Ridgeview Estates (West St)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	100	40	205	15	229	202	1083	226	375	1179	41
Future Volume (vph)	94	100	40	205	15	229	202	1083	226	375	1179	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	250		0	175		0	175		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.958			0.859			0.974			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1785	0	1770	1600	0	1770	3447	0	1770	3522	0
Flt Permitted	0.298			0.629			0.171			0.090		
Satd. Flow (perm)	555	1785	0	1172	1600	0	319	3447	0	168	3522	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			249			33			6	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		906			1161			1141			1447	
Travel Time (s)		20.6			26.4			19.4			24.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	109	43	223	16	249	220	1177	246	408	1282	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	102	152	0	223	265	0	220	1423	0	408	1327	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Detector Phase	4	4		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	20.4	20.4		20.4	20.4		9.0	29.1		26.0	30.1	
Total Split (s)	20.0	20.0		20.0	20.0		13.0	44.0		26.0	57.0	
Total Split (%)	22.2%	22.2%		22.2%	22.2%		14.4%	48.9%		28.9%	63.3%	
Maximum Green (s)	13.6	13.6		13.6	13.6		9.0	36.9		22.0	49.9	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	2.7		1.0	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4		4.0	7.1		4.0	7.1	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	0.2		2.0	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	16.0	16.0		16.0	16.0			11.0			15.0	
Flash Dont Walk (s)	1.0	1.0		1.0	1.0			7.0			7.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	13.6	13.6		13.6	13.6		51.4	40.3		66.0	51.0	
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.57	0.45		0.73	0.57	
v/c Ratio	1.23	0.53		1.26	0.58		0.71	0.91		0.90	0.66	
Control Delay	209.3	38.4		189.2	11.7		30.0	29.6		53.2	11.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	209.3	38.4		189.2	11.7		30.0	29.6		53.2	11.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	D		F	B		C	C		D	B	
Approach Delay		107.0			92.8			29.6			21.4	
Approach LOS		F			F			C			C	
Queue Length 50th (ft)	~72	70		~161	8		42	396		207	127	
Queue Length 95th (ft)	#172	132		#301	78		#133	#574		#321	191	
Internal Link Dist (ft)		826			1081			1061			1367	
Turn Bay Length (ft)	150			250			175			175		
Base Capacity (vph)	83	285		177	453		330	1563		514	1997	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.23	0.53		1.26	0.58		0.67	0.91		0.79	0.66	

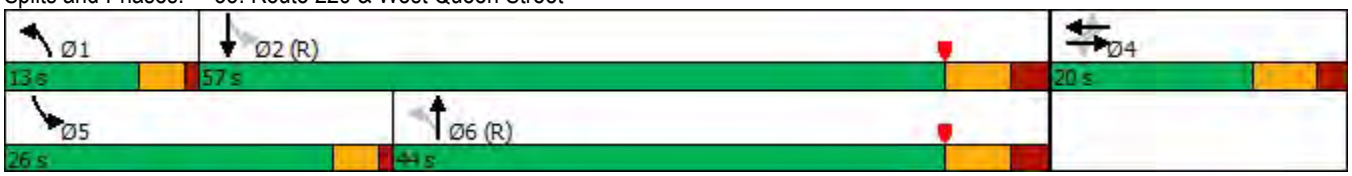
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.26
Intersection Signal Delay: 38.4 Intersection LOS: D
Intersection Capacity Utilization 98.6% ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 35: Route 229 & West Queen Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	135	65	1505	1393	35
Future Volume (vph)	35	135	65	1505	1393	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	250	100			250
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.91	0.91	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1610	3390	3539	1583
Flt Permitted	0.950		0.095	0.955		
Satd. Flow (perm)	1770	1583	161	3238	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		147				38
Link Speed (mph)	30			40	40	
Link Distance (ft)	746			2348	1141	
Travel Time (s)	17.0			40.0	19.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	147	71	1636	1514	38
Shared Lane Traffic (%)			10%			
Lane Group Flow (vph)	38	147	64	1643	1514	38
Turn Type	Prot	Perm	D.P+P	NA	NA	Perm
Protected Phases	4		1	1 2	2	
Permitted Phases		4	2			2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		15.0	15.0
Minimum Split (s)	30.0	30.0	8.0		28.8	28.8
Total Split (s)	25.0	25.0	16.0		49.0	49.0
Total Split (%)	27.8%	27.8%	17.8%		54.4%	54.4%
Maximum Green (s)	21.0	21.0	12.0		42.2	42.2
Yellow Time (s)	3.0	3.0	3.0		4.4	4.4
All-Red Time (s)	1.0	1.0	1.0		2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		6.8	6.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		C-Max	C-Max
Walk Time (s)	11.0	11.0			11.0	11.0
Flash Dont Walk (s)	7.0	7.0			7.0	7.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	8.2	8.2	69.8	69.8	42.2	42.2
Actuated g/C Ratio	0.09	0.09	0.78	0.78	0.47	0.47
v/c Ratio	0.24	0.53	0.12	0.64	0.91	0.05
Control Delay	40.9	14.1	2.5	4.7	26.3	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.9	14.1	2.5	4.7	26.3	5.9

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
LOS	D	B	A	A	C	A
Approach Delay	19.6			4.6	25.8	
Approach LOS	B			A	C	
Queue Length 50th (ft)	21	0	4	113	317	1
Queue Length 95th (ft)	49	53	14	210	m389	m3
Internal Link Dist (ft)	666			2268	1061	
Turn Bay Length (ft)		250	100			250
Base Capacity (vph)	413	482	524	2553	1659	762
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.30	0.12	0.64	0.91	0.05

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 14.9 Intersection LOS: B
Intersection Capacity Utilization 72.1% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

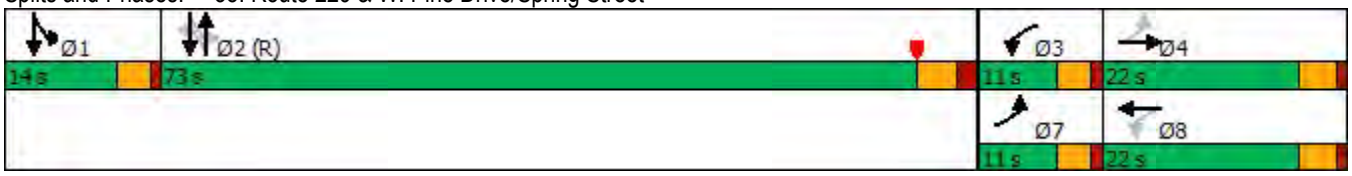
Splits and Phases: 36: Route 229 & Welch Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	10	58	70	0	72	15	1433	145	173	1360	15
Future Volume (vph)	20	10	58	70	0	72	15	1433	145	173	1360	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			7%			0%	
Storage Length (ft)	250		0	0		95	205		0	205		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			100			25			180		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.872			0.850			0.986			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1624	0	1770	1583	0	1708	3368	0	1770	3532	0
Flt Permitted	0.706			0.579			0.174			0.056		
Satd. Flow (perm)	1315	1624	0	1079	1583	0	313	3368	0	104	3532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		63			226			15			2	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		1101			991			3268			2348	
Travel Time (s)		25.0			22.5			55.7			40.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	11	63	76	0	78	16	1558	158	188	1478	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	74	0	76	78	0	16	1716	0	188	1494	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4		3	8			2		1	1 2	
Permitted Phases	4			8			2			1 2		
Detector Phase	7	4		3	8		2	2		1	1 2	
Switch Phase												
Minimum Initial (s)	5.0	9.0		5.0	5.0		25.0	25.0		5.0		
Minimum Split (s)	9.5	20.5		9.5	22.5		32.6	32.6		9.0		
Total Split (s)	11.0	22.0		11.0	22.0		73.0	73.0		14.0		
Total Split (%)	9.2%	18.3%		9.2%	18.3%		60.8%	60.8%		11.7%		
Maximum Green (s)	7.0	17.5		7.0	17.5		67.5	67.5		10.0		
Yellow Time (s)	3.0	3.5		3.0	3.5		3.5	3.5		3.0		
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		1.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		
Total Lost Time (s)	4.0	4.5		4.0	4.5		5.5	5.5		4.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.0	4.0		2.0		
Recall Mode	None	None		None	None		C-Min	C-Min		Min		
Walk Time (s)		15.0					15.0	15.0				
Flash Dont Walk (s)		1.0					11.0	11.0				
Pedestrian Calls (#/hr)		0					0	0				
Act Effct Green (s)	14.4	9.4		15.7	10.9		73.8	73.8		92.0	96.8	
Actuated g/C Ratio	0.12	0.08		0.13	0.09		0.62	0.62		0.77	0.81	
v/c Ratio	0.12	0.40		0.42	0.22		0.08	0.83		0.60	0.52	
Control Delay	43.0	23.0		51.0	1.5		13.7	24.9		34.2	6.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	43.0	23.0		51.0	1.5		13.7	24.9		34.2	6.0	
LOS	D	C		D	A		B	C		C	A	
Approach Delay		27.6			25.9			24.8			9.2	
Approach LOS		C			C			C			A	
Queue Length 50th (ft)	14	8		52	0		6	588		84	212	
Queue Length 95th (ft)	38	56		97	0		18	717		166	276	
Internal Link Dist (ft)		1021			911			3188			2268	
Turn Bay Length (ft)	250						205			205		
Base Capacity (vph)	190	290		182	429		192	2077		312	2850	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.12	0.26		0.42	0.18		0.08	0.83		0.60	0.52	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 2.1 (2%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 17.7	Intersection LOS: B
Intersection Capacity Utilization 81.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 38: Route 229 & W. Pine Drive/Spring Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	10	80	68	10	112	4	1416	112	191	1260	21
Future Volume (vph)	20	10	80	68	10	112	4	1416	112	191	1260	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	14	12	14	12	12	12	12	12	12
Grade (%)		0%			0%			0%			7%	
Storage Length (ft)	250		0	250		0	0		0	250		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.867			0.862			0.989			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1615	0	1888	1606	0	1770	3500	0	1708	3409	0
Flt Permitted	0.516			0.653			0.193			0.082		
Satd. Flow (perm)	961	1615	0	1297	1606	0	360	3500	0	147	3409	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		79			122			14			4	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		2534			992			424			3268	
Travel Time (s)		57.6			22.5			7.2			55.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	11	87	74	11	122	4	1539	122	208	1370	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	98	0	74	133	0	4	1661	0	208	1393	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.P+P	NA	
Protected Phases		4			8			2		1	1 2	
Permitted Phases	4			8			2			2		
Detector Phase	4	4		8	8		2	2		1	1 2	
Switch Phase												
Minimum Initial (s)	1.0	1.0		5.0	5.0		15.0	15.0		5.0		
Minimum Split (s)	23.0	23.0		23.0	23.0		36.0	36.0		9.5		
Total Split (s)	23.0	23.0		23.0	23.0		54.0	54.0		13.0		
Total Split (%)	25.6%	25.6%		25.6%	25.6%		60.0%	60.0%		14.4%		
Maximum Green (s)	19.0	19.0		19.0	19.0		48.0	48.0		8.5		
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		3.5		
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		1.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		6.0	6.0		4.5		
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	1.5	1.5		3.0	3.0		2.5	2.5		3.0		
Recall Mode	None	None		None	None		C-Min	C-Min		None		
Walk Time (s)	12.0	12.0		12.0	12.0		15.0	15.0				
Flash Dont Walk (s)	6.0	6.0		6.0	6.0		15.0	15.0				
Pedestrian Calls (#/hr)	0	0		0	0		0	0				
Act Effct Green (s)	10.2	10.2		10.2	10.2		48.9	48.9		66.8	71.3	
Actuated g/C Ratio	0.11	0.11		0.11	0.11		0.54	0.54		0.74	0.79	
v/c Ratio	0.20	0.39		0.51	0.46		0.02	0.87		0.53	0.52	
Control Delay	38.9	16.4		48.6	13.7		5.5	25.4		21.4	4.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0		0.0	47.7		0.0	0.1	
Total Delay	38.9	16.4		48.6	13.7		5.5	73.0		21.4	4.5	
LOS	D	B		D	B		A	E		C	A	
Approach Delay		20.5			26.2			72.9			6.7	
Approach LOS		C			C			E			A	
Queue Length 50th (ft)	12	10		40	6		1	534		52	108	
Queue Length 95th (ft)	33	52		80	55		m1	#608		134	190	
Internal Link Dist (ft)		2454			912			344			3188	
Turn Bay Length (ft)	250			250						250		
Base Capacity (vph)	202	403		273	435		196	1909		393	2702	
Starvation Cap Reductn	0	0		0	0		0	708		0	0	
Spillback Cap Reductn	0	4		0	0		0	0		0	195	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.11	0.25		0.27	0.31		0.02	1.38		0.53	0.56	

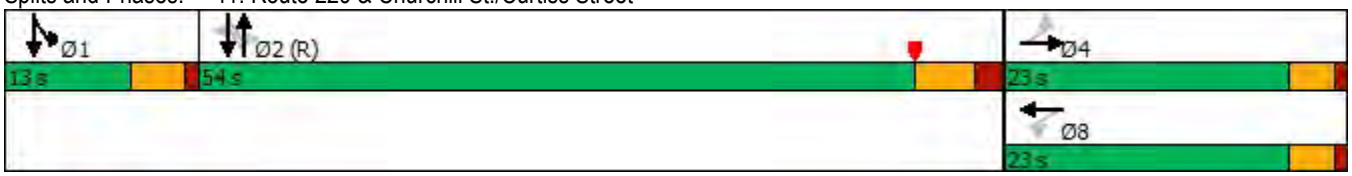
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0.3 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 38.9 Intersection LOS: D
Intersection Capacity Utilization 79.5% ICU Level of Service D
Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 41: Route 229 & Churchill St./Curtiss Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	5	98	5	0	13	103	1433	5	13	1235	160
Future Volume (vph)	86	5	98	5	0	13	103	1433	5	13	1235	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	65		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.930			0.901						0.983	
Flt Protected		0.978			0.987		0.950			0.950		
Satd. Flow (prot)	0	1694	0	0	1657	0	1770	3539	0	1770	3479	0
Flt Permitted		0.848			0.934		0.081			0.081		
Satd. Flow (perm)	0	1469	0	0	1568	0	151	3539	0	151	3479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		56			91						22	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		287			281			412			424	
Travel Time (s)		6.5			6.4			7.0			7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	5	107	5	0	14	112	1558	5	14	1342	174
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	205	0	0	19	0	112	1563	0	14	1516	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		7	4		5	2		5	2	
Permitted Phases	4			4			2			2		
Detector Phase	7	4		7	4		5	2		5	2	
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	9.5	17.6		9.5	17.6		9.5	29.0		9.5	29.0	
Total Split (s)	10.0	19.0		10.0	19.0		10.0	51.0		10.0	51.0	
Total Split (%)	11.1%	21.1%		11.1%	21.1%		11.1%	56.7%		11.1%	56.7%	
Maximum Green (s)	5.5	14.5		5.5	14.5		5.5	45.0		5.5	45.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	4.0		3.5	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	6.0		4.5	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	2.0		3.0	2.0		3.0	0.2		3.0	0.2	
Recall Mode	None	C-Min		None	C-Min		None	Max		None	Max	
Walk Time (s)		12.0			12.0			12.0			12.0	
Flash Dont Walk (s)		1.0			1.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)		21.9			21.9		55.5	49.1		55.5	49.1	
Actuated g/C Ratio		0.24			0.24		0.62	0.55		0.62	0.55	
v/c Ratio		0.51			0.04		0.55	0.81		0.07	0.79	
Control Delay		25.4			0.2		24.3	29.8		6.5	18.1	
Queue Delay		0.1			0.0		0.0	47.3		0.0	0.1	
Total Delay		25.5			0.2		24.3	77.1		6.5	18.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		C			A		C	E		A	B	
Approach Delay		25.5			0.2			73.6			18.0	
Approach LOS		C			A			E			B	
Queue Length 50th (ft)		70			0		35	421		3	236	
Queue Length 95th (ft)		136			0		#88	#553		m5	275	
Internal Link Dist (ft)		207			201			332			344	
Turn Bay Length (ft)							100			65		
Base Capacity (vph)		400			451		202	1929		202	1907	
Starvation Cap Reductn		0			0		0	0		0	24	
Spillback Cap Reductn		8			0		0	507		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.52			0.04		0.55	1.10		0.07	0.81	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 4:EBWB, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 45.5 Intersection LOS: D
Intersection Capacity Utilization 75.1% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 42: Route 229 & Corporate Drive/Centrion Plaza Drive

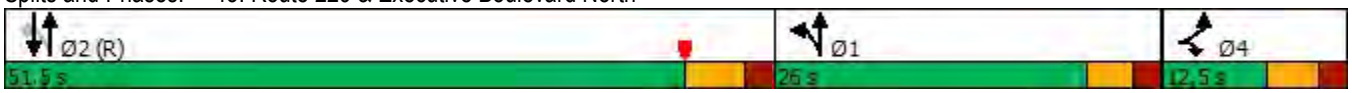
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	54	51	122	1487	1312	76
Future Volume (vph)	54	51	122	1487	1312	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	360	220			100
Storage Lanes	1	1	1			1
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.109			
Satd. Flow (perm)	1770	1583	203	3539	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		55				45
Link Speed (mph)	30			40	40	
Link Distance (ft)	694			570	291	
Travel Time (s)	15.8			9.7	5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	55	133	1616	1426	83
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	55	133	1616	1426	83
Turn Type	Prot	Prot	pm+pt	NA	NA	Perm
Protected Phases	4	4	1	1 2	2	
Permitted Phases			1 2			2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		15.0	15.0
Minimum Split (s)	12.5	12.5	9.0		33.0	33.0
Total Split (s)	12.5	12.5	26.0		51.5	51.5
Total Split (%)	13.9%	13.9%	28.9%		57.2%	57.2%
Maximum Green (s)	7.0	7.0	21.0		45.5	45.5
Yellow Time (s)	3.5	3.5	3.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5	5.0		6.0	6.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	2.5	2.5	2.0		0.2	0.2
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)					15.0	15.0
Flash Dont Walk (s)					12.0	12.0
Pedestrian Calls (#/hr)					0	0
Act Effct Green (s)	7.6	7.6	69.4	75.4	52.7	52.7
Actuated g/C Ratio	0.08	0.08	0.77	0.84	0.59	0.59
v/c Ratio	0.40	0.30	0.31	0.55	0.69	0.09
Control Delay	47.3	16.0	11.3	3.5	13.2	2.6
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0
Total Delay	47.3	16.0	11.3	3.7	13.2	2.6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
LOS	D	B	B	A	B	A
Approach Delay	32.2			4.3	12.6	
Approach LOS	C			A	B	
Queue Length 50th (ft)	32	0	12	140	416	8
Queue Length 95th (ft)	72	36	m51	211	511	m14
Internal Link Dist (ft)	614			490	211	
Turn Bay Length (ft)		360	220			100
Base Capacity (vph)	149	183	531	3097	2073	945
Starvation Cap Reductn	0	0	0	500	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.30	0.25	0.62	0.69	0.09

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 8.9 Intersection LOS: A
Intersection Capacity Utilization 62.6% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 43: Route 229 & Executive Boulevard North



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	56	100	365	1553	1206	202
Future Volume (vph)	56	100	365	1553	1206	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			5%	0%	
Storage Length (ft)	860	370	335			250
Storage Lanes	1	1	2			1
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	0.88	0.97	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	2787	3347	3451	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	2787	3347	3451	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		47				141
Link Speed (mph)	30			40	40	
Link Distance (ft)	945			579	570	
Travel Time (s)	21.5			9.9	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	109	397	1688	1311	220
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	109	397	1688	1311	220
Turn Type	Prot	pt+ov	Prot	NA	NA	pm+ov
Protected Phases	4	1 4	1	1 2	2	4
Permitted Phases		1 4				2
Detector Phase	4	1 4	1	1 2	2	4
Switch Phase						
Minimum Initial (s)	7.0		4.0		15.0	7.0
Minimum Split (s)	12.5		9.0		29.0	12.5
Total Split (s)	13.0		28.0		49.0	13.0
Total Split (%)	14.4%		31.1%		54.4%	14.4%
Maximum Green (s)	7.5		23.0		43.0	7.5
Yellow Time (s)	3.5		3.0		4.0	3.5
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.5		5.0		6.0	5.5
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.5		2.0		0.2	2.5
Recall Mode	None		None		C-Max	None
Walk Time (s)	12.0				12.0	12.0
Flash Dont Walk (s)	11.0				11.0	11.0
Pedestrian Calls (#/hr)	0				0	0
Act Effct Green (s)	7.3	35.7	22.9	72.2	43.3	56.6
Actuated g/C Ratio	0.08	0.40	0.25	0.80	0.48	0.63
v/c Ratio	0.43	0.10	0.47	0.61	0.77	0.21
Control Delay	48.9	10.5	35.6	3.0	8.2	0.5
Queue Delay	0.0	0.0	0.0	0.1	1.4	0.0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Delay	48.9	10.5	35.6	3.1	9.6	0.5
LOS	D	B	D	A	A	A
Approach Delay	24.3			9.3	8.3	
Approach LOS	C			A	A	
Queue Length 50th (ft)	34	11	109	70	29	0
Queue Length 95th (ft)	73	30	m154	140	111	m1
Internal Link Dist (ft)	865			499	490	
Turn Bay Length (ft)	860	370	335			250
Base Capacity (vph)	147	1085	859	2739	1703	1051
Starvation Cap Reductn	0	0	0	171	20	0
Spillback Cap Reductn	0	7	0	0	206	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.10	0.46	0.66	0.88	0.21

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 89.9 (100%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 9.6	Intersection LOS: A
Intersection Capacity Utilization 63.3%	ICU Level of Service B
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 44: Route 229 & Executive Boulevard South

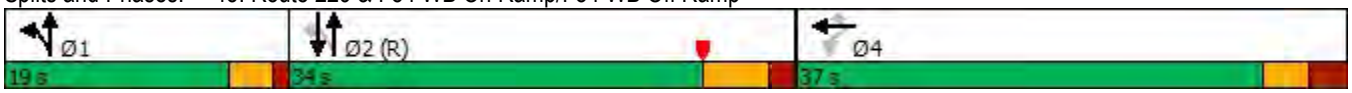
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	145	0	420	45	1445	0	0	433	873
Future Volume (vph)	0	0	0	145	0	420	45	1445	0	0	433	873
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			5%	
Storage Length (ft)	0		0	240		440	90		0	0		250
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			100			100			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950	0.950		0.950					
Satd. Flow (prot)	0	0	0	1681	1681	1583	1770	3539	0	0	3451	1544
Flt Permitted				0.950	0.950		0.425					
Satd. Flow (perm)	0	0	0	1681	1681	1583	792	3539	0	0	3451	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						87						949
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		337			747			508			579	
Travel Time (s)		7.7			17.0			8.7			9.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	158	0	457	49	1571	0	0	471	949
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	0	0	79	79	457	49	1571	0	0	471	949
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					4		1	1 2			2	
Permitted Phases				4		4	1 2					2
Detector Phase				4	4	4	1	1 2			2	2
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0	5.0				15.0	15.0
Minimum Split (s)				12.7	12.7	12.7	9.0				21.2	21.2
Total Split (s)				37.0	37.0	37.0	19.0				34.0	34.0
Total Split (%)				41.1%	41.1%	41.1%	21.1%				37.8%	37.8%
Maximum Green (s)				31.3	31.3	31.3	15.0				27.8	27.8
Yellow Time (s)				3.0	3.0	3.0	3.0				4.3	4.3
All-Red Time (s)				2.7	2.7	2.7	1.0				1.9	1.9
Lost Time Adjust (s)				0.0	0.0	0.0	0.0				0.0	0.0
Total Lost Time (s)				5.7	5.7	5.7	4.0				6.2	6.2
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)				2.0	2.0	2.0	2.0				0.2	0.2
Recall Mode				None	None	None	None				C-Max	C-Max
Act Effct Green (s)				26.0	26.0	26.0	50.3	54.3			29.3	29.3
Actuated g/C Ratio				0.29	0.29	0.29	0.56	0.60			0.33	0.33
v/c Ratio				0.16	0.16	0.88	0.08	0.74			0.42	0.83
Control Delay				22.6	22.6	43.1	9.4	16.6			12.6	17.7
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	48.9
Total Delay				22.6	22.6	43.1	9.4	16.6			12.6	66.6
LOS				C	C	D	A	B			B	E
Approach Delay					37.9			16.4			48.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS					D			B			D	
Queue Length 50th (ft)				33	33	198	11	325			38	542
Queue Length 95th (ft)				65	65	#310	29	461			m81	#671
Internal Link Dist (ft)		257			667			428			499	
Turn Bay Length (ft)				240		440	90					250
Base Capacity (vph)				584	584	607	646	2135			1124	1142
Starvation Cap Reductn				0	0	0	0	0			0	298
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.14	0.14	0.75	0.08	0.74			0.42	1.12

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 32.6 Intersection LOS: C
Intersection Capacity Utilization 77.3% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 45: Route 229 & I-84 WB On Ramp/I-84 WB Off Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	735	126	352	715	5	358	0	339	5	20	5
Future Volume (vph)	0	735	126	352	715	5	358	0	339	5	20	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	150		150	0		0
Storage Lanes	0		1	0		0	1		1	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.999				0.850		0.979	
Flt Protected					0.984		0.950	0.950			0.992	
Satd. Flow (prot)	0	3539	1583	0	3479	0	1681	1681	1583	0	1809	0
Flt Permitted					0.562		0.950	0.950			0.992	
Satd. Flow (perm)	0	3539	1583	0	1987	0	1681	1681	1583	0	1809	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			137		1				190		5	
Link Speed (mph)		35			35			35			30	
Link Distance (ft)		363			299			709			169	
Travel Time (s)		7.1			5.8			13.8			3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	799	137	383	777	5	389	0	368	5	22	5
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	799	137	0	1165	0	194	195	368	0	32	0
Turn Type		NA	Perm	D.P+P	NA		Split	NA	pm+ov	Split	NA	
Protected Phases		2		1	1 2		5	5	1	4	4	
Permitted Phases	2		2	2					5			
Detector Phase	2	2	2	1	1 2		5	5	1	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	7.0			9.0	9.0	7.0	5.0	5.0	
Minimum Split (s)	22.4	22.4	22.4	11.0			13.0	13.0	11.0	24.3	24.3	
Total Split (s)	54.0	54.0	54.0	10.0			25.0	25.0	10.0	11.0	11.0	
Total Split (%)	54.0%	54.0%	54.0%	10.0%			25.0%	25.0%	10.0%	11.0%	11.0%	
Maximum Green (s)	46.6	46.6	46.6	6.0			21.0	21.0	6.0	4.7	4.7	
Yellow Time (s)	4.4	4.4	4.4	3.0			3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0	3.0	1.0			1.0	1.0	1.0	3.3	3.3	
Lost Time Adjust (s)		0.0	0.0				0.0	0.0	0.0		0.0	
Total Lost Time (s)		7.4	7.4				4.0	4.0	4.0		6.3	
Lead/Lag	Lag	Lag	Lag	Lead					Lead			
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2	0.2	0.2			3.0	3.0	0.2	1.5	1.5	
Recall Mode	C-Max	C-Max	C-Max	Min			Min	Min	Min	None	None	
Walk Time (s)										17.0	17.0	
Flash Dont Walk (s)										1.0	1.0	
Pedestrian Calls (#/hr)										0	0	
Act Effct Green (s)		50.2	50.2		64.5		16.4	16.4	28.9		5.3	
Actuated g/C Ratio		0.50	0.50		0.64		0.16	0.16	0.29		0.05	
v/c Ratio		0.45	0.16		0.81		0.71	0.71	0.62		0.32	
Control Delay		17.8	3.2		19.7		53.1	53.3	15.6		49.0	
Queue Delay		0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Delay		17.8	3.2		19.7		53.1	53.3	15.6		49.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		B	A		B		D	D	B		D	
Approach Delay		15.7			19.7			35.0			49.0	
Approach LOS		B			B			C			D	
Queue Length 50th (ft)		178	0		195		124	124	73		17	
Queue Length 95th (ft)		231	32		#364		193	194	153		48	
Internal Link Dist (ft)		283			219			629			89	
Turn Bay Length (ft)			150				150		150			
Base Capacity (vph)		1777	863		1445		353	353	592		100	
Starvation Cap Reductn		0	0		0		0	0	0		0	
Spillback Cap Reductn		0	0		0		0	0	0		0	
Storage Cap Reductn		0	0		0		0	0	0		0	
Reduced v/c Ratio		0.45	0.16		0.81		0.55	0.55	0.62		0.32	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 54 (54%), Referenced to phase 2:EBWB, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 22.7 Intersection LOS: C
Intersection Capacity Utilization 79.9% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Route 229/Driveway & Route 6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	25	41	94	35	51	67	697	99	31	667	10
Future Volume (vph)	5	25	41	94	35	51	67	697	99	31	667	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	200		0	200		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.921			0.911			0.981			0.998	
Flt Protected		0.997		0.950			0.950			0.950		
Satd. Flow (prot)	0	1710	0	1770	1697	0	1681	1736	0	1770	1859	0
Flt Permitted		0.981		0.723			0.330	0.995		0.242		
Satd. Flow (perm)	0	1683	0	1347	1697	0	584	1727	0	451	1859	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		859			830			899			709	
Travel Time (s)		19.5			18.9			17.5			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	27	45	102	38	55	73	758	108	34	725	11
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	0	77	0	102	93	0	66	873	0	34	736	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	9.0	9.0		9.0	9.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	13.4	13.4		13.4	13.4		36.3	36.3		36.3	36.3	
Total Split (s)	20.0	20.0		20.0	20.0		70.0	70.0		70.0	70.0	
Total Split (%)	22.2%	22.2%		22.2%	22.2%		77.8%	77.8%		77.8%	77.8%	
Maximum Green (s)	15.6	15.6		15.6	15.6		64.7	64.7		64.7	64.7	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.8	3.8		3.8	3.8	
All-Red Time (s)	1.4	1.4		1.4	1.4		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.4		4.4	4.4		5.3	5.3		5.3	5.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)							20.0	20.0		20.0	20.0	
Flash Dont Walk (s)							4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)		12.1		12.1	12.1		68.2	68.2		68.2	68.2	
Actuated g/C Ratio		0.13		0.13	0.13		0.76	0.76		0.76	0.76	
v/c Ratio		0.34		0.56	0.41		0.15	0.67		0.10	0.52	
Control Delay		38.6		48.3	40.4		2.9	5.4		4.2	6.4	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		38.6		48.3	40.4		2.9	5.4		4.2	6.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		D		D	D		A	A		A	A	
Approach Delay		38.6			44.5			5.2			6.3	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		40		55	49		7	104		4	133	
Queue Length 95th (ft)		79		103	92		m9	109		14	243	
Internal Link Dist (ft)		779			750			819			629	
Turn Bay Length (ft)				100			200			200		
Base Capacity (vph)		291		233	294		442	1308		341	1408	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.26		0.44	0.32		0.15	0.67		0.10	0.52	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 10.8 Intersection LOS: B
Intersection Capacity Utilization 69.4% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Route 229 & Moody St/Louisianna Ave

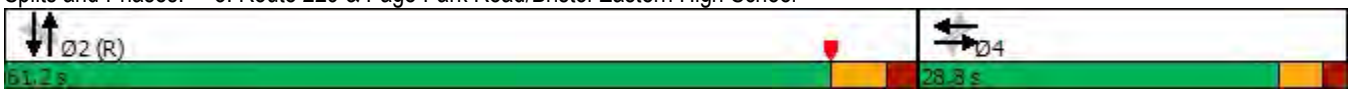
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	0	10	30	0	10	35	834	15	5	773	25
Future Volume (vph)	20	0	10	30	0	10	35	834	15	5	773	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955			0.966			0.997			0.995	
Flt Protected		0.968			0.964		0.950			0.950		
Satd. Flow (prot)	0	1722	0	0	1735	0	1770	1857	0	1770	1853	0
Flt Permitted		0.797			0.758		0.287			0.262		
Satd. Flow (perm)	0	1418	0	0	1364	0	535	1857	0	488	1853	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			35			2			3	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		480			517			662			899	
Travel Time (s)		10.9			11.8			12.9			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	0	11	33	0	11	38	907	16	5	840	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	44	0	38	923	0	5	867	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	28.7	28.7		28.7	28.7		35.9	35.9		35.9	35.9	
Total Split (s)	28.8	28.8		28.8	28.8		61.2	61.2		61.2	61.2	
Total Split (%)	32.0%	32.0%		32.0%	32.0%		68.0%	68.0%		68.0%	68.0%	
Maximum Green (s)	24.1	24.1		24.1	24.1		55.3	55.3		55.3	55.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.8	3.8		3.8	3.8	
All-Red Time (s)	1.7	1.7		1.7	1.7		2.1	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.7			4.7		5.9	5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		10.0			10.0		73.5	73.5		73.5	73.5	
Actuated g/C Ratio		0.11			0.11		0.82	0.82		0.82	0.82	
v/c Ratio		0.18			0.24		0.09	0.61		0.01	0.57	
Control Delay		14.7			19.6		3.6	6.1		2.2	5.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		14.7			19.6		3.6	6.1		2.2	5.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		B			B		A	A		A	A	
Approach Delay		14.7			19.6			6.0			5.6	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)		0			5		5	191		1	92	
Queue Length 95th (ft)		26			36		m8	217		m1	106	
Internal Link Dist (ft)		400			437			582			819	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		405			390		437	1517		398	1514	
Starvation Cap Reductn		0			0		0	35		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.08			0.11		0.09	0.62		0.01	0.57	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 6.3 Intersection LOS: A
Intersection Capacity Utilization 62.0% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Route 229 & Page Park Road/Bristol Eastern High School



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	6	796	732	87	109	27
Future Volume (vph)	6	796	732	87	109	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.986		0.973	
Flt Protected					0.961	
Satd. Flow (prot)	0	1863	1837	0	1742	0
Flt Permitted		0.994			0.961	
Satd. Flow (perm)	0	1852	1837	0	1742	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			15		13	
Link Speed (mph)		35	35		30	
Link Distance (ft)		1271	662		359	
Travel Time (s)		24.8	12.9		8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	865	796	95	118	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	872	891	0	147	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	2		4	
Permitted Phases	2					
Detector Phase	2	2	2		4	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0		10.0	
Minimum Split (s)	39.0	39.0	39.0		24.5	
Total Split (s)	65.5	65.5	65.5		24.5	
Total Split (%)	72.8%	72.8%	72.8%		27.2%	
Maximum Green (s)	60.5	60.5	60.5		20.5	
Yellow Time (s)	4.0	4.0	4.0		3.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		5.0	5.0		4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	5.0	5.0	5.0		3.0	
Recall Mode	C-Min	C-Min	C-Min		None	
Walk Time (s)	23.0	23.0	23.0		20.0	
Flash Dont Walk (s)	2.0	2.0	2.0		0.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effct Green (s)		68.2	68.2		12.8	
Actuated g/C Ratio		0.76	0.76		0.14	
v/c Ratio		0.62	0.64		0.57	
Control Delay		12.0	4.5		41.1	
Queue Delay		0.0	0.0		0.0	
Total Delay		12.0	4.5		41.1	
LOS		B	A		D	
Approach Delay		12.0	4.5		41.1	
Approach LOS		B	A		D	

Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Queue Length 50th (ft)		261	54		72	
Queue Length 95th (ft)		m360	100		125	
Internal Link Dist (ft)		1191	582		279	
Turn Bay Length (ft)						
Base Capacity (vph)		1403	1395		406	
Starvation Cap Reductn		0	5		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.62	0.64		0.36	

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 10.7	Intersection LOS: B
Intersection Capacity Utilization 62.5%	ICU Level of Service B
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 4: Woodland Street & Route 229

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	50	45	1271	1541	20
Future Volume (vph)	15	50	45	1271	1541	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.896				0.998	
Flt Protected	0.989			0.998		
Satd. Flow (prot)	1651	0	0	3532	3532	0
Flt Permitted	0.989			0.828		
Satd. Flow (perm)	1651	0	0	2930	3532	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	17				3	
Link Speed (mph)	30			30	30	
Link Distance (ft)	832			624	268	
Travel Time (s)	18.9			14.2	6.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	54	49	1382	1675	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	0	0	1431	1697	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	22.5		22.5	22.5	22.5	
Total Split (s)	22.5		37.5	37.5	37.5	
Total Split (%)	37.5%		62.5%	62.5%	62.5%	
Maximum Green (s)	18.0		33.0	33.0	33.0	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	4.5			4.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		C-Max	C-Max	C-Max	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	7.5			49.4	49.4	
Actuated g/C Ratio	0.12			0.82	0.82	
v/c Ratio	0.32			0.59	0.58	
Control Delay	22.5			4.4	2.9	
Queue Delay	0.0			0.0	0.0	
Total Delay	22.5			4.4	2.9	
LOS	C			A	A	
Approach Delay	22.5			4.4	2.9	
Approach LOS	C			A	A	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 50th (ft)	18			92	60	
Queue Length 95th (ft)	47			m241	98	
Internal Link Dist (ft)	752			544	188	
Turn Bay Length (ft)						
Base Capacity (vph)	507			2411	2907	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.14			0.59	0.58	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 33 (55%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 4.0	Intersection LOS: A
Intersection Capacity Utilization 79.5%	ICU Level of Service D
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 8: Route 229 & Vincent P. Kelly Rd

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	200	134	738	96	124	715
Future Volume (vph)	200	134	738	96	124	715
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	160	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.946		0.985			
Flt Protected	0.971				0.950	
Satd. Flow (prot)	1711	0	1835	0	1770	1863
Flt Permitted	0.971				0.950	
Satd. Flow (perm)	1711	0	1835	0	1770	1863
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	34		11			
Link Speed (mph)	30		35			35
Link Distance (ft)	835		2121			1598
Travel Time (s)	19.0		41.3			31.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	146	802	104	135	777
Shared Lane Traffic (%)						
Lane Group Flow (vph)	363	0	906	0	135	777
Turn Type	Prot		NA		Prot	NA
Protected Phases	4		2		1	1 2
Permitted Phases						
Detector Phase	4		2		1	1 2
Switch Phase						
Minimum Initial (s)	9.0		15.0		5.0	
Minimum Split (s)	22.0		37.9		9.0	
Total Split (s)	22.0		54.0		14.0	
Total Split (%)	24.4%		60.0%		15.6%	
Maximum Green (s)	18.0		48.1		10.0	
Yellow Time (s)	3.0		4.0		3.0	
All-Red Time (s)	1.0		1.9		1.0	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	4.0		5.9		4.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		4.0		1.0	
Recall Mode	None		C-Min		None	
Walk Time (s)			21.0			
Flash Dont Walk (s)			4.0			
Pedestrian Calls (#/hr)			0			
Act Effct Green (s)	18.3		47.8		10.0	63.7
Actuated g/C Ratio	0.20		0.53		0.11	0.71
v/c Ratio	0.97		0.93		0.69	0.59
Control Delay	74.1		31.7		57.6	7.2
Queue Delay	0.0		0.0		0.0	0.0
Total Delay	74.1		31.7		57.6	7.2

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS	E		C		E	A
Approach Delay	74.1		31.7			14.6
Approach LOS	E		C			B
Queue Length 50th (ft)	190		555		65	67
Queue Length 95th (ft)	#370		#733		m#135	212
Internal Link Dist (ft)	755		2041			1518
Turn Bay Length (ft)					160	
Base Capacity (vph)	374		985		196	1324
Starvation Cap Reductn	0		0		0	0
Spillback Cap Reductn	0		0		0	0
Storage Cap Reductn	0		0		0	0
Reduced v/c Ratio	0.97		0.92		0.69	0.59

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 62.1 (69%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 31.6 Intersection LOS: C
Intersection Capacity Utilization 82.4% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Route 229 & West Washington Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	196	95	729	177	60	804
Future Volume (vph)	196	95	729	177	60	804
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	490	325		130	220	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	1583	3539	1583	1770	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		103		192		
Link Speed (mph)	30		30			30
Link Distance (ft)	911		424			459
Travel Time (s)	20.7		9.6			10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	213	103	792	192	65	874
Shared Lane Traffic (%)						
Lane Group Flow (vph)	213	103	792	192	65	874
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4	2	4	1	1 2
Permitted Phases				2		
Detector Phase	4	4	2	4	1	1 2
Switch Phase						
Minimum Initial (s)	6.0	6.0	15.0	6.0	6.0	
Minimum Split (s)	25.0	25.0	20.9	25.0	10.9	
Total Split (s)	26.0	26.0	45.0	26.0	19.0	
Total Split (%)	28.9%	28.9%	50.0%	28.9%	21.1%	
Maximum Green (s)	22.0	22.0	39.1	22.0	14.1	
Yellow Time (s)	3.0	3.0	4.9	3.0	3.3	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	5.9	4.0	4.9	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	3.0	2.0	3.0	
Recall Mode	None	None	C-Min	None	None	
Walk Time (s)	1.0	1.0		1.0		
Flash Dont Walk (s)	20.0	20.0		20.0		
Pedestrian Calls (#/hr)	0	0		0		
Act Effct Green (s)	10.0	10.0	49.0	64.9	16.2	71.1
Actuated g/C Ratio	0.11	0.11	0.54	0.72	0.18	0.79
v/c Ratio	0.56	0.39	0.41	0.16	0.20	0.31
Control Delay	43.4	12.1	7.2	1.4	36.3	2.0
Queue Delay	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	43.4	12.1	7.3	1.4	36.3	2.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS	D	B	A	A	D	A
Approach Delay	33.2		6.1			4.4
Approach LOS	C		A			A
Queue Length 50th (ft)	60	0	78	0	38	33
Queue Length 95th (ft)	92	44	114	m0	m51	m59
Internal Link Dist (ft)	831		344			379
Turn Bay Length (ft)	490	325		130	220	
Base Capacity (vph)	839	464	1927	1380	334	2750
Starvation Cap Reductn	0	0	195	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.22	0.46	0.14	0.19	0.32

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 9.2 Intersection LOS: A
Intersection Capacity Utilization 43.1% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Route 229 & Broad Street

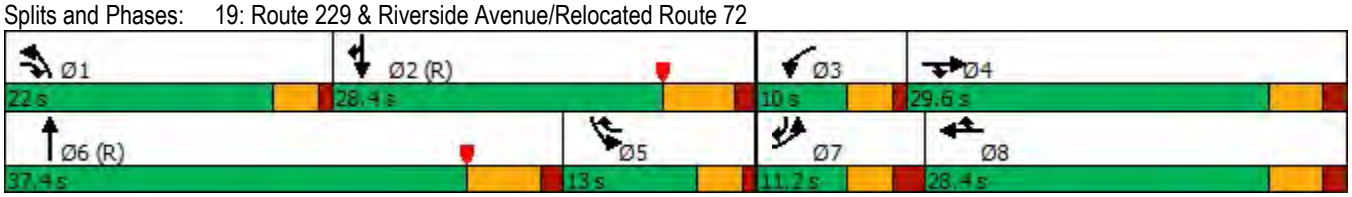
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	370	346	20	365	92	287	635	50	120	654	232
Future Volume (vph)	169	370	346	20	365	92	287	635	50	120	654	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	525		765	65		300	400		0	200		275
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	150			135			90			75		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850			0.850		0.989				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	1770	3539	1583	1770	3500	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1863	1583	1770	3539	1583	1770	3500	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			214			138		10				140
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		918			774			907			424	
Travel Time (s)		20.9			17.6			20.6			9.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	184	402	376	22	397	100	312	690	54	130	711	252
Shared Lane Traffic (%)												
Lane Group Flow (vph)	184	402	376	22	397	100	312	744	0	130	711	252
Turn Type	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA		Prot	NA	pt+ov
Protected Phases	7	4	4 1	3	8	5 8	1	6		5	2	2 7
Permitted Phases												
Detector Phase	7	4	4 1	3	8	5 8	1	6		5	2	2 7
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	15.0		6.0	15.0	
Minimum Split (s)	11.2	28.4		10.0	28.4		10.0	21.4		10.0	21.4	
Total Split (s)	11.2	29.6		10.0	28.4		22.0	37.4		13.0	28.4	
Total Split (%)	12.4%	32.9%		11.1%	31.6%		24.4%	41.6%		14.4%	31.6%	
Maximum Green (s)	6.0	24.2		6.0	23.0		18.0	31.0		9.0	22.0	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	4.9		3.0	4.9	
All-Red Time (s)	2.2	1.7		1.0	1.7		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.4		4.0	5.4		4.0	6.4		4.0	6.4	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		22.0			22.0							
Flash Dont Walk (s)		1.0			1.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	6.2	24.1	46.9	6.0	16.7	32.8	18.8	31.4		14.7	27.3	38.6
Actuated g/C Ratio	0.07	0.27	0.52	0.07	0.19	0.36	0.21	0.35		0.16	0.30	0.43
v/c Ratio	0.78	0.81	0.41	0.19	0.60	0.15	0.84	0.61		0.45	0.66	0.33
Control Delay	65.2	45.0	6.6	43.6	36.8	1.4	56.1	26.6		42.1	31.3	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	65.2	45.0	6.6	43.6	36.8	1.4	56.1	26.6		42.1	31.3	8.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	D	A	D	D	A	E	C		D	C	A
Approach Delay		33.8			30.3			35.4			27.3	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)	54	208	40	12	113	0	162	177		62	192	33
Queue Length 95th (ft)	#109	#358	107	36	143	12	#322	240		#169	#295	87
Internal Link Dist (ft)		838			694			827			344	
Turn Bay Length (ft)	525		765	65		300	400			200		275
Base Capacity (vph)	235	506	907	118	904	764	379	1247		288	1072	759
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.78	0.79	0.41	0.19	0.44	0.13	0.82	0.60		0.45	0.66	0.33

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 31.8 Intersection LOS: C
Intersection Capacity Utilization 75.0% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 19: Route 229 & Riverside Avenue/Relocated Route 72



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	360	367	253	285	46	375	866	258	107	869	89
Future Volume (vph)	66	360	367	253	285	46	375	866	258	107	869	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	240		240	400		0	300		75
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (ft)	150			150			70			90		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.924			0.979			0.966			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3270	0	1770	3465	0	1770	3419	0	3433	3490	0
Flt Permitted	0.537			0.175			0.000			0.215		
Satd. Flow (perm)	1000	3270	0	326	3465	0	0	3419	0	777	3490	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		140			10			60			17	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		669			802			666			907	
Travel Time (s)		15.2			18.2			15.1			20.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	391	399	275	310	50	408	941	280	116	945	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	790	0	275	360	0	408	1221	0	116	1042	0
Turn Type	pm+pt	NA		pm+pt	NA		D.P+P	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1 2!	2 5!		1!	5!	
Permitted Phases	4			8			5			5		
Detector Phase	7	4		3	8		1 2	2 5		1	5	
Switch Phase												
Minimum Initial (s)	4.0	7.0		4.0	7.0					15.0	15.0	
Minimum Split (s)	8.2	13.0		8.2	13.0					55.3	55.3	
Total Split (s)	12.3	24.7		14.3	26.7					56.0	111.0	
Total Split (%)	8.2%	16.5%		9.5%	17.8%					37.3%	74.0%	
Maximum Green (s)	8.1	18.7		10.1	20.7					48.5	103.5	
Yellow Time (s)	3.2	3.8		3.2	3.8					5.0	5.0	
All-Red Time (s)	1.0	2.2		1.0	2.2					2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)	4.2	6.0		4.2	6.0					7.5	7.5	
Lead/Lag	Lead	Lag		Lead	Lag					Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0					2.0	3.0	
Recall Mode	None	None		None	None					None	C-Min	
Walk Time (s)											37.0	
Flash Dont Walk (s)											4.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)	28.4	18.7		48.9	35.4		88.9	89.1		88.9	88.9	
Actuated g/C Ratio	0.19	0.12		0.33	0.24		0.59	0.59		0.59	0.59	
v/c Ratio	0.31	1.49		0.80	0.44		0.39	0.59		0.14	0.50	
Control Delay	44.0	265.6		60.8	51.9		16.6	18.8		12.0	17.8	
Queue Delay	0.0	0.0		0.0	0.0		1.1	0.5		0.0	0.0	
Total Delay	44.0	265.6		60.8	51.9		17.7	19.3		12.0	17.8	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	55.3
Total Split (s)	55.0
Total Split (%)	37%
Maximum Green (s)	47.7
Yellow Time (s)	4.9
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Min
Walk Time (s)	37.0
Flash Dont Walk (s)	4.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	F		E	D		B	B		B	B	
Approach Delay		247.1			55.7			18.9			17.2	
Approach LOS		F			E			B			B	
Queue Length 50th (ft)	49	~496		211	153		208	370		24	301	
Queue Length 95th (ft)	103	#632		#531	234		204	313		27	256	
Internal Link Dist (ft)		589			722			586			827	
Turn Bay Length (ft)	200			240			400			300		
Base Capacity (vph)	239	530		343	825		1049	2382		1319	2413	
Starvation Cap Reductn	0	0		0	0		402	627		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.30	1.49		0.80	0.44		0.63	0.70		0.09	0.43	

Intersection Summary

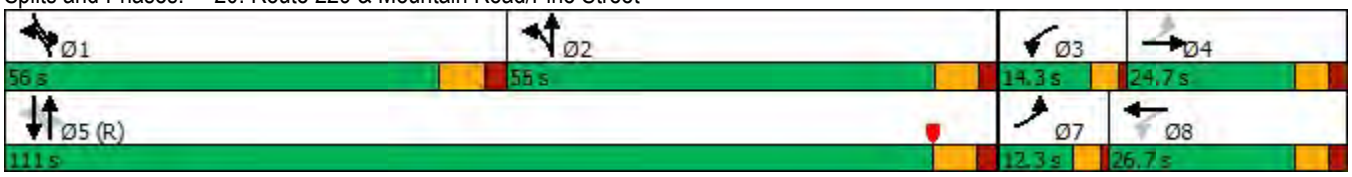
Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 149.8 (100%), Referenced to phase 5:NBSB, Start of Yellow
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.49
Intersection Signal Delay: 69.8 Intersection LOS: E
Intersection Capacity Utilization 104.4% ICU Level of Service G
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

! Phase conflict between lane groups.

Splits and Phases: 20: Route 229 & Mountain Road/Pine Street



Lane Group	Ø2
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

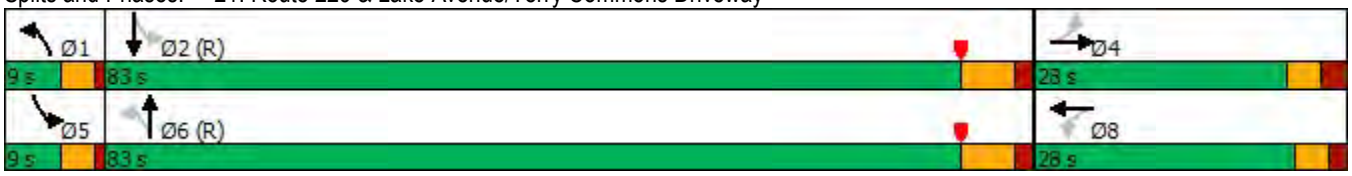
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	5	15	10	0	5	12	1349	27	10	1487	142
Future Volume (vph)	135	5	15	10	0	5	12	1349	27	10	1487	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	130		0	70		0	55		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			25			50			70		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.971			0.850			0.997			0.987	
Flt Protected	0.950	0.964		0.950			0.950			0.950		
Satd. Flow (prot)	1681	1656	0	1770	1583	0	1770	3529	0	1770	3493	0
Flt Permitted	0.754	0.778		0.700			0.093			0.145		
Satd. Flow (perm)	1334	1337	0	1304	1583	0	173	3529	0	270	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			113			3			16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		650			212			757			666	
Travel Time (s)		14.8			4.8			17.2			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	5	16	11	0	5	13	1466	29	11	1616	154
Shared Lane Traffic (%)	42%											
Lane Group Flow (vph)	85	83	0	11	5	0	13	1495	0	11	1770	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	11.5	11.5		23.8	23.8		9.0	48.7		9.0	48.7	
Total Split (s)	28.0	28.0		28.0	28.0		9.0	83.0		9.0	83.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		7.5%	69.2%		7.5%	69.2%	
Maximum Green (s)	22.5	22.5		23.2	23.2		5.0	76.3		5.0	76.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	4.9		3.0	4.9	
All-Red Time (s)	2.5	2.5		1.8	1.8		1.0	1.8		1.0	1.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		4.8	4.8		4.0	6.7		4.0	6.7	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)				15.0	15.0			31.0			31.0	
Flash Dont Walk (s)				4.0	4.0			4.0			4.0	
Pedestrian Calls (#/hr)				0	0			0			0	
Act Effct Green (s)	12.0	12.0		12.7	12.7		97.5	93.8		97.2	92.2	
Actuated g/C Ratio	0.10	0.10		0.11	0.11		0.81	0.78		0.81	0.77	
v/c Ratio	0.64	0.59		0.08	0.02		0.06	0.54		0.04	0.66	
Control Delay	72.2	61.5		46.8	0.2		2.1	6.1		3.0	9.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	1.0	
Total Delay	72.2	61.5		46.8	0.2		2.1	6.1		3.0	10.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	E		D	A		A	A		A	B	
Approach Delay		66.9			32.2			6.1			10.3	
Approach LOS		E			C			A			B	
Queue Length 50th (ft)	67	58		8	0		1	92		1	236	
Queue Length 95th (ft)	120	110		25	0		m3	365		6	517	
Internal Link Dist (ft)		570			132			677			586	
Turn Bay Length (ft)	200			130			70			55		
Base Capacity (vph)	250	258		252	397		207	2759		289	2687	
Starvation Cap Reductn	0	0		0	0		0	0		0	596	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.34	0.32		0.04	0.01		0.06	0.54		0.04	0.85	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 11.3 Intersection LOS: B
Intersection Capacity Utilization 66.8% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Route 229 & Lake Avenue/Terry Commons Driveway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	0	20	60	10	105	45	1179	53	43	1439	25
Future Volume (vph)	35	0	20	60	10	105	45	1179	53	43	1439	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		175	60		0	180		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			75			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.950				0.850		0.994			0.997	
Flt Protected		0.969			0.959		0.950			0.950		
Satd. Flow (prot)	0	1715	0	0	1786	1583	1770	3518	0	1770	3529	0
Flt Permitted		0.817			0.703		0.152			0.152		
Satd. Flow (perm)	0	1446	0	0	1310	1583	283	3518	0	283	3529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		222				129		8			3	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		674			483			840			981	
Travel Time (s)		15.3			11.0			14.3			22.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	0	22	65	11	114	49	1282	58	47	1564	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	0	0	76	114	49	1340	0	47	1591	0
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		7			4 7		5	2		1	6	
Permitted Phases	7			4 7		4 7	2			6		
Detector Phase	7	7		4 7	4 7	4 7	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0					5.0	15.0		5.0	15.0	
Minimum Split (s)	10.8	10.8					9.0	21.1		9.0	21.1	
Total Split (s)	10.8	10.8					9.0	28.1		9.0	28.1	
Total Split (%)	18.0%	18.0%					15.0%	46.8%		15.0%	46.8%	
Maximum Green (s)	5.0	5.0					5.0	22.0		5.0	22.0	
Yellow Time (s)	3.0	3.0					3.0	4.2		3.0	4.2	
All-Red Time (s)	2.8	2.8					1.0	1.9		1.0	1.9	
Lost Time Adjust (s)		0.0					0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.8					4.0	6.1		4.0	6.1	
Lead/Lag	Lag	Lag					Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes										
Vehicle Extension (s)	2.0	2.0					2.0	0.2		2.0	0.2	
Recall Mode	None	None					None	C-Max		None	C-Max	
Walk Time (s)	24.0	24.0										
Flash Dont Walk (s)	1.0	1.0										
Pedestrian Calls (#/hr)	0	0										
Act Effct Green (s)		5.0			15.6	15.6	35.3	31.4		35.3	31.4	
Actuated g/C Ratio		0.08			0.26	0.26	0.59	0.52		0.59	0.52	
v/c Ratio		0.19			0.22	0.22	0.17	0.73		0.16	0.86	
Control Delay		1.3			17.8	4.3	7.5	23.8		6.7	27.3	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		1.3			17.8	4.3	7.5	23.8		6.7	27.3	

Lane Group	Ø4
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	4
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	12.1
Total Split (s)	12.1
Total Split (%)	20%
Maximum Green (s)	7.0
Yellow Time (s)	3.0
All-Red Time (s)	2.1
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A			B	A	A	C		A	C	
Approach Delay		1.3			9.7			23.2			26.7	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)		0			20	0	10	~300		7	~574	
Queue Length 95th (ft)		0			48	26	m12	#425		m15	#644	
Internal Link Dist (ft)		594			403			760			901	
Turn Bay Length (ft)						175	60			180		
Base Capacity (vph)		324			341	508	290	1845		290	1848	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.19			0.22	0.22	0.17	0.73		0.16	0.86	

Intersection Summary

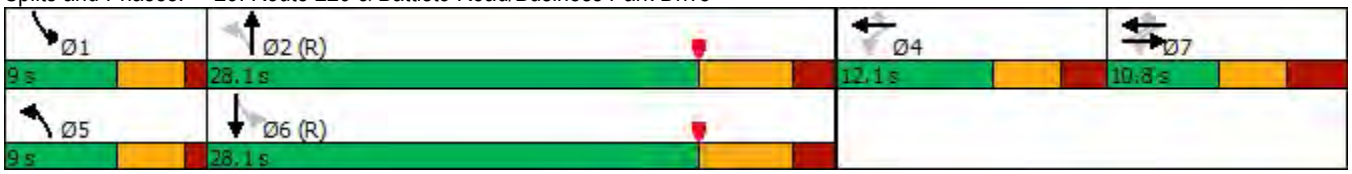
Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 23.8 Intersection LOS: C
Intersection Capacity Utilization 60.3% ICU Level of Service B
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Route 229 & Battisto Road/Business Park Drive



Lane Group	Ø4
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	90	74	128	80	102	62	1069	97	126	1220	77
Future Volume (vph)	105	90	74	128	80	102	62	1069	97	126	1220	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	14	12
Storage Length (ft)	125		0	160		0	160		0	235		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			100			250		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.933			0.916			0.988			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1738	0	1770	1706	0	1770	3497	0	1770	3741	0
Flt Permitted	0.604			0.645			0.220			0.220		
Satd. Flow (perm)	1125	1738	0	1201	1706	0	410	3497	0	410	3741	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			111			15			16	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		744			601			1500			624	
Travel Time (s)		16.9			13.7			25.6			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	98	80	139	87	111	67	1162	105	137	1326	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	114	178	0	139	198	0	67	1267	0	137	1410	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4			2			1 2		
Detector Phase	4	4		4	4		2	2		1	1 2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		5.0		
Minimum Split (s)	29.3	29.3		29.3	29.3		23.3	23.3		9.0		
Total Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		12.0		
Total Split (%)	40.0%	40.0%		40.0%	40.0%		40.0%	40.0%		20.0%		
Maximum Green (s)	18.7	18.7		18.7	18.7		15.7	15.7		8.0		
Yellow Time (s)	3.6	3.6		3.6	3.6		4.3	4.3		3.0		
All-Red Time (s)	1.7	1.7		1.7	1.7		4.0	4.0		1.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		
Total Lost Time (s)	5.3	5.3		5.3	5.3		8.3	8.3		4.0		
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		1.0		
Recall Mode	None	None		None	None		C-Max	C-Max		None		
Walk Time (s)	23.0	23.0		23.0	23.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	12.4	12.4		12.4	12.4		18.2	18.2		34.3	38.3	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.30	0.30		0.57	0.64	
v/c Ratio	0.49	0.46		0.56	0.45		0.54	1.18		0.27	0.59	
Control Delay	26.8	18.8		28.9	12.2		31.0	109.5		5.8	9.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	26.8	18.8		28.9	12.2		31.0	109.5		5.8	9.8	
LOS	C	B		C	B		C	F		A	A	
Approach Delay		21.9			19.1			105.5			9.5	
Approach LOS		C			B			F			A	
Queue Length 50th (ft)	37	44		46	27		12	~314		10	197	
Queue Length 95th (ft)	69	80		82	65		m#35	#279		36	334	
Internal Link Dist (ft)		664			521			1420			544	
Turn Bay Length (ft)	125			160			160			235		
Base Capacity (vph)	350	567		374	608		124	1070		501	2392	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.33	0.31		0.37	0.33		0.54	1.18		0.27	0.59	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 53 (88%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 47.9 Intersection LOS: D
Intersection Capacity Utilization 84.1% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

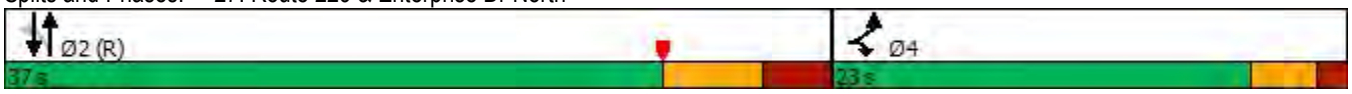
Splits and Phases: 25: Route 229 & Cross Street/Redstone Hill Road

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	95	85	50	1141	1275	95
Future Volume (vph)	95	85	50	1141	1275	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12
Grade (%)	0%			6%	0%	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850			0.990	
Flt Protected	0.950			0.998		
Satd. Flow (prot)	1770	1794	0	3426	3504	0
Flt Permitted	0.950			0.803		
Satd. Flow (perm)	1770	1794	0	2757	3504	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		23			18	
Link Speed (mph)	30			40	40	
Link Distance (ft)	411			1591	1500	
Travel Time (s)	9.3			27.1	25.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	92	54	1240	1386	103
Shared Lane Traffic (%)						
Lane Group Flow (vph)	103	92	0	1294	1489	0
Turn Type	Prot	Prot	Perm	NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases			2		2	
Detector Phase	4	4	2	2	2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	15.0	15.0	15.0	
Minimum Split (s)	20.4	20.4	22.6	22.6	22.6	
Total Split (s)	23.0	23.0	37.0	37.0	37.0	
Total Split (%)	38.3%	38.3%	61.7%	61.7%	61.7%	
Maximum Green (s)	18.6	18.6	29.4	29.4	29.4	
Yellow Time (s)	3.0	3.0	4.4	4.4	4.4	
All-Red Time (s)	1.4	1.4	3.2	3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.4	4.4		7.6	7.6	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	0.2	0.2	0.2	
Recall Mode	None	None	C-Min	C-Min	C-Min	
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	7.2	7.2		44.2	44.2	
Actuated g/C Ratio	0.12	0.12		0.74	0.74	
v/c Ratio	0.49	0.39		0.64	0.58	
Control Delay	31.8	23.6		6.6	5.6	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	31.8	23.6		6.6	5.6	
LOS	C	C		A	A	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach Delay	27.9			6.6	5.6	
Approach LOS	C			A	A	
Queue Length 50th (ft)	36	24		77	286	
Queue Length 95th (ft)	72	57		m42	32	
Internal Link Dist (ft)	331			1511	1420	
Turn Bay Length (ft)						
Base Capacity (vph)	548	572		2030	2584	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.19	0.16		0.64	0.58	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 31 (52%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 7.5	Intersection LOS: A
Intersection Capacity Utilization 83.6%	ICU Level of Service E
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 27: Route 229 & Enterprise Dr North



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	225	0	35	0	1251	207	60	1295	0
Future Volume (vph)	0	0	0	225	0	35	0	1251	207	60	1295	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			7%			6%	
Storage Length (ft)	0		0	0		300	280		130	165		165
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt						0.850			0.850			
Flt Protected					0.950					0.950		
Satd. Flow (prot)	0	1863	0	0	1770	1583	1798	3415	1528	1717	3433	0
Flt Permitted					0.757					0.189		
Satd. Flow (perm)	0	1863	0	0	1410	1583	1798	3415	1528	341	3433	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						125			176			
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		261			414			713			1591	
Travel Time (s)		5.9			9.4			12.2			27.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	245	0	38	0	1360	225	65	1408	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	245	38	0	1360	225	65	1408	0
Turn Type				Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4		4	2		2	1 2		
Detector Phase	4	4		4	4	4	2	2	2	1	1 2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	15.0	15.0	15.0	5.0		
Minimum Split (s)	30.6	30.6		30.6	30.6	30.6	20.9	20.9	20.9	9.0		
Total Split (s)	25.0	25.0		25.0	25.0	25.0	26.0	26.0	26.0	9.0		
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	43.3%	43.3%	43.3%	15.0%		
Maximum Green (s)	19.4	19.4		19.4	19.4	19.4	20.1	20.1	20.1	5.0		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.4	4.4	4.4	3.0		
All-Red Time (s)	2.6	2.6		2.6	2.6	2.6	1.5	1.5	1.5	1.0		
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		5.6			5.6	5.6	5.9	5.9	5.9	4.0		
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	0.2	0.2	0.2	1.0		
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None		
Walk Time (s)	24.0	24.0		24.0	24.0	24.0						
Flash Dont Walk (s)	1.0	1.0		1.0	1.0	1.0						
Pedestrian Calls (#/hr)	0	0		0	0	0						
Act Effct Green (s)					13.7	13.7		21.2	21.2	32.7	36.7	
Actuated g/C Ratio					0.23	0.23		0.35	0.35	0.54	0.61	
v/c Ratio					0.76	0.08		1.13	0.35	0.16	0.67	
Control Delay					36.4	0.3		85.5	3.7	3.3	7.8	
Queue Delay					0.0	0.0		0.0	0.0	0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					36.4	0.3		85.5	3.7	3.3	7.8	
LOS					D	A		F	A	A	A	
Approach Delay					31.5			73.9			7.6	
Approach LOS					C			E			A	
Queue Length 50th (ft)					82	0		~303	0	2	137	
Queue Length 95th (ft)					134	0		#430	17	m6	298	
Internal Link Dist (ft)		181			334			633			1511	
Turn Bay Length (ft)						300			130	165		
Base Capacity (vph)					455	596		1204	652	406	2099	
Starvation Cap Reductn					0	0		0	0	0	0	
Spillback Cap Reductn					0	0		0	0	0	0	
Storage Cap Reductn					0	0		0	0	0	0	
Reduced v/c Ratio					0.54	0.06		1.13	0.35	0.16	0.67	

Intersection Summary

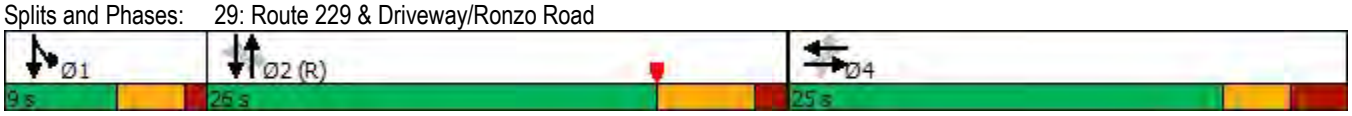
Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 57 (95%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.13
Intersection Signal Delay: 41.1 Intersection LOS: D
Intersection Capacity Utilization 70.3% ICU Level of Service C
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 29: Route 229 & Driveway/Ronzo Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	55	60	1442	1520	10
Future Volume (vph)	15	55	60	1442	1520	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			7%	7%	
Storage Length (ft)	0	0	745			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.999	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1708	3415	3412	0
Flt Permitted	0.950		0.102			
Satd. Flow (perm)	1770	1583	183	3415	3412	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)					1	
Link Speed (mph)	30			40	40	
Link Distance (ft)	703			1424	713	
Travel Time (s)	16.0			24.3	12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	60	65	1567	1652	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	60	65	1567	1663	0
Turn Type	Prot	pt+ov	pm+pt	NA	NA	
Protected Phases	8	8 5	5	2	6	
Permitted Phases			2			
Detector Phase	8	8 5	5	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	24.0		9.0	21.7	21.7	
Total Split (s)	24.0		16.0	36.0	20.0	
Total Split (%)	40.0%		26.7%	60.0%	33.3%	
Maximum Green (s)	20.0		12.0	29.3	13.3	
Yellow Time (s)	3.0		3.0	4.4	4.4	
All-Red Time (s)	1.0		1.0	2.3	2.3	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0		4.0	6.7	6.7	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	C-Min	C-Min	
Walk Time (s)	19.0					
Flash Dont Walk (s)	1.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	7.3	13.7	48.7	48.6	38.9	
Actuated g/C Ratio	0.12	0.23	0.81	0.81	0.65	
v/c Ratio	0.07	0.17	0.21	0.57	0.75	
Control Delay	23.1	16.7	3.4	3.7	10.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	

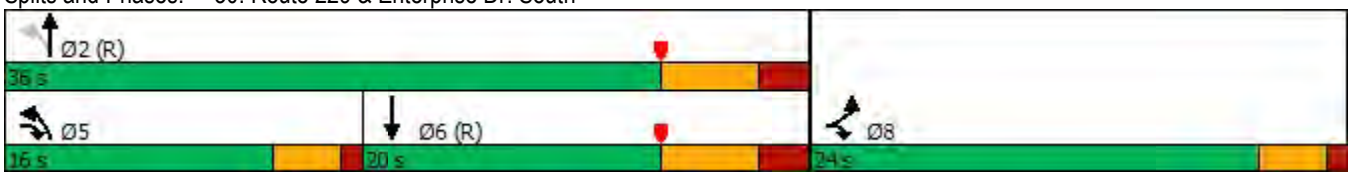
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Delay	23.1	16.7	3.4	3.7	10.5	
LOS	C	B	A	A	B	
Approach Delay	18.1			3.7	10.5	
Approach LOS	B			A	B	
Queue Length 50th (ft)	5	16	1	88	81	
Queue Length 95th (ft)	19	37	m0	m323	#456	
Internal Link Dist (ft)	623			1344	633	
Turn Bay Length (ft)			745			
Base Capacity (vph)	590	594	453	2768	2211	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.03	0.10	0.14	0.57	0.75	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 7.4	Intersection LOS: A
Intersection Capacity Utilization 62.9%	ICU Level of Service B
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 30: Route 229 & Enterprise Dr. South



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	25	1472	30	25	1575
Future Volume (vph)	30	25	1472	30	25	1575
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			7%
Storage Length (ft)	0	0		105	95	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3539	1583	1708	3415
Flt Permitted	0.950				0.166	
Satd. Flow (perm)	1770	1583	3539	1583	298	3415
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		27		18		
Link Speed (mph)	30		40			40
Link Distance (ft)	370		539			1424
Travel Time (s)	8.4		9.2			24.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	27	1600	33	27	1712
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	27	1600	33	27	1712
Turn Type	Prot	Prot	NA	Prot	pm+pt	NA
Protected Phases	4	4	2	2	1	1 2
Permitted Phases					1 2	
Detector Phase	4	4	2	2	1	1 2
Switch Phase						
Minimum Initial (s)	5.0	5.0	14.0	14.0	4.0	
Minimum Split (s)	22.1	22.1	20.8	20.8	8.0	
Total Split (s)	24.0	24.0	27.0	27.0	9.0	
Total Split (%)	40.0%	40.0%	45.0%	45.0%	15.0%	
Maximum Green (s)	19.9	19.9	20.2	20.2	5.0	
Yellow Time (s)	3.0	3.0	4.4	4.4	3.0	
All-Red Time (s)	1.1	1.1	2.4	2.4	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.1	4.1	6.8	6.8	4.0	
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	5.0	5.0	2.0	
Recall Mode	None	None	C-Min	C-Min	None	
Walk Time (s)	17.0	17.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	5.8	5.8	25.7	25.7	45.7	51.3
Actuated g/C Ratio	0.10	0.10	0.43	0.43	0.76	0.86
v/c Ratio	0.19	0.15	1.05	0.05	0.04	0.59
Control Delay	27.1	12.8	56.5	3.3	2.3	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	27.1	12.8	56.5	3.3	2.3	3.9
LOS	C	B	E	A	A	A
Approach Delay	20.7		55.4			3.9
Approach LOS	C		E			A
Queue Length 50th (ft)	11	0	~423	5	1	37
Queue Length 95th (ft)	33	19	#528	m1	m3	150
Internal Link Dist (ft)	290		459			1344
Turn Bay Length (ft)				105	95	
Base Capacity (vph)	587	543	1518	689	630	2919
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.05	1.05	0.05	0.04	0.59

Intersection Summary

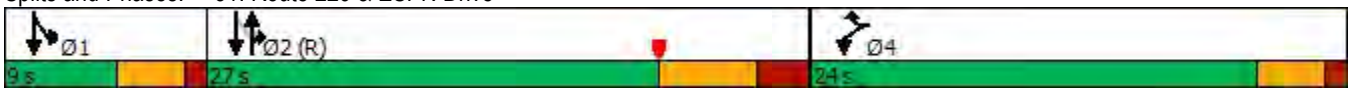
Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 15.7 (26%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 28.7 Intersection LOS: C
Intersection Capacity Utilization 54.5% ICU Level of Service A
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 31: Route 229 & ESPN Drive



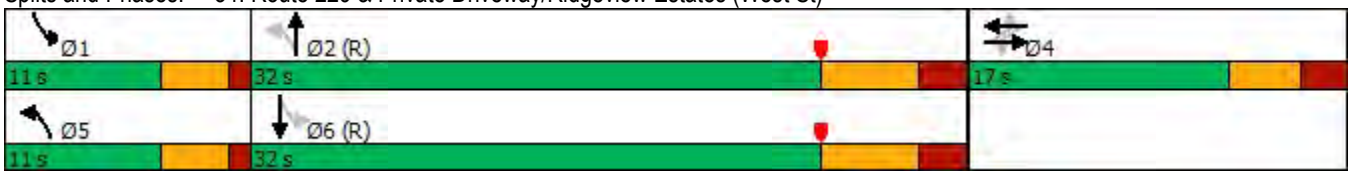
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	10	80	45	10	10	88	1414	65	10	1506	88
Future Volume (vph)	85	10	80	45	10	10	88	1414	65	10	1506	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		50	0		120	120		0	150		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	25			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.867			0.925			0.993			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1615	0	1770	1723	0	1770	3514	0	1770	3511	0
Flt Permitted	0.743			0.694			0.112			0.124		
Satd. Flow (perm)	1384	1615	0	1293	1723	0	209	3514	0	231	3511	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		87			11			10			12	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		299			498			1447			922	
Travel Time (s)		6.8			11.3			24.7			15.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	11	87	49	11	11	96	1537	71	11	1637	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	92	98	0	49	22	0	96	1608	0	11	1733	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4			2			6		
Detector Phase	4	4		4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	13.4	13.4		13.4	13.4		9.0	21.6		9.0	21.6	
Total Split (s)	17.0	17.0		17.0	17.0		11.0	32.0		11.0	32.0	
Total Split (%)	28.3%	28.3%		28.3%	28.3%		18.3%	53.3%		18.3%	53.3%	
Maximum Green (s)	11.6	11.6		11.6	11.6		7.0	25.4		7.0	25.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.1	2.1		2.1	2.1		1.0	2.2		1.0	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	5.4		5.4	5.4		4.0	6.6		4.0	6.6	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	0.2		1.5	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	9.0	9.0		9.0	9.0		43.8	41.2		40.7	35.4	
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.73	0.69		0.68	0.59	
v/c Ratio	0.44	0.31		0.25	0.08		0.33	0.67		0.04	0.84	
Control Delay	29.9	10.0		25.4	15.9		6.6	11.6		1.9	15.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.9	10.0		25.4	15.9		6.6	11.6		1.9	15.5	
LOS	C	B		C	B		A	B		A	B	
Approach Delay		19.7			22.4			11.3			15.5	
Approach LOS		B			C			B			B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	32	4		16	4		8	150		1	58	
Queue Length 95th (ft)	66	36		40	19		24	#454		m0	#553	
Internal Link Dist (ft)		219			418			1367			842	
Turn Bay Length (ft)	50						120			150		
Base Capacity (vph)	267	382		249	341		335	2415		342	2075	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.34	0.26		0.20	0.06		0.29	0.67		0.03	0.84	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 50 (83%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 13.9 Intersection LOS: B
Intersection Capacity Utilization 74.0% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 34: Route 229 & Private Driveway/Ridgeview Estates (West St)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	25	115	348	30	442	30	876	374	522	1067	31
Future Volume (vph)	153	25	115	348	30	442	30	876	374	522	1067	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	250		0	175		0	175		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.877			0.860			0.955			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1634	0	1770	1602	0	1770	3380	0	1770	3525	0
Flt Permitted	0.191			0.660			0.164			0.122		
Satd. Flow (perm)	356	1634	0	1229	1602	0	305	3380	0	227	3525	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		125			295			78			4	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		906			1161			1141			1447	
Travel Time (s)		20.6			26.4			19.4			24.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	166	27	125	378	33	480	33	952	407	567	1160	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	152	0	378	513	0	33	1359	0	567	1194	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Detector Phase	4	4		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	25.4	25.4		25.4	25.4		9.0	22.1		9.0	22.1	
Total Split (s)	36.0	36.0		36.0	36.0		9.0	36.0		18.0	45.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		10.0%	40.0%		20.0%	50.0%	
Maximum Green (s)	29.6	29.6		29.6	29.6		5.0	28.9		14.0	37.9	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	2.7		1.0	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4		4.0	7.1		4.0	7.1	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	0.2		2.0	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	18.0	18.0		18.0	18.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	29.6	29.6		29.6	29.6		37.0	28.9		50.0	41.5	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.41	0.32		0.56	0.46	
v/c Ratio	1.42	0.24		0.94	0.71		0.16	1.19		1.55	0.73	
Control Delay	259.5	7.3		62.7	17.0		10.6	122.3		283.1	23.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	259.5	7.3		62.7	17.0		10.6	122.3		283.1	23.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	A		E	B		B	F		F	C	
Approach Delay		139.0			36.4			119.7			107.4	
Approach LOS		F			D			F			F	
Queue Length 50th (ft)	~128	10		206	103		5	~484		~408	302	
Queue Length 95th (ft)	#253	52		#382	226		m9	#273		#612	389	
Internal Link Dist (ft)		826			1081			1061			1367	
Turn Bay Length (ft)	150			250			175			175		
Base Capacity (vph)	117	621		404	724		206	1138		366	1627	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.42	0.24		0.94	0.71		0.16	1.19		1.55	0.73	

Intersection Summary

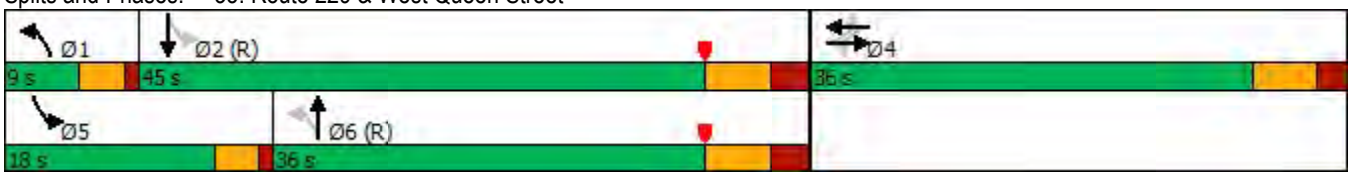
Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.55
Intersection Signal Delay: 99.1 Intersection LOS: F
Intersection Capacity Utilization 122.4% ICU Level of Service H
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 35: Route 229 & West Queen Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	50	40	1250	1500	35
Future Volume (vph)	35	50	40	1250	1500	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	250	100			250
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.91	0.91	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1610	3390	3539	1583
Flt Permitted	0.950		0.099	0.955		
Satd. Flow (perm)	1770	1583	168	3238	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		54				36
Link Speed (mph)	30			40	40	
Link Distance (ft)	746			2348	1141	
Travel Time (s)	17.0			40.0	19.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	54	43	1359	1630	38
Shared Lane Traffic (%)			10%			
Lane Group Flow (vph)	38	54	39	1363	1630	38
Turn Type	Prot	Perm	D.P+P	NA	NA	Perm
Protected Phases	4		1	1 2	2	
Permitted Phases		4	2			2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		15.0	15.0
Minimum Split (s)	30.0	30.0	8.0		24.8	24.8
Total Split (s)	30.0	30.0	12.0		48.0	48.0
Total Split (%)	33.3%	33.3%	13.3%		53.3%	53.3%
Maximum Green (s)	26.0	26.0	8.0		41.2	41.2
Yellow Time (s)	3.0	3.0	3.0		4.4	4.4
All-Red Time (s)	1.0	1.0	1.0		2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		6.8	6.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		C-Max	C-Max
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	7.9	7.9	72.3	72.3	41.2	41.2
Actuated g/C Ratio	0.09	0.09	0.80	0.80	0.46	0.46
v/c Ratio	0.25	0.29	0.07	0.51	1.01	0.05
Control Delay	41.9	15.2	2.0	3.1	41.7	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	15.2	2.0	3.1	41.7	7.8

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
LOS	D	B	A	A	D	A
Approach Delay	26.2			3.1	40.9	
Approach LOS	C			A	D	
Queue Length 50th (ft)	21	0	3	81	~304	1
Queue Length 95th (ft)	50	34	8	132	m#620	m7
Internal Link Dist (ft)	666			2268	1061	
Turn Bay Length (ft)		250	100			250
Base Capacity (vph)	511	495	588	2649	1620	744
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.11	0.07	0.51	1.01	0.05

Intersection Summary

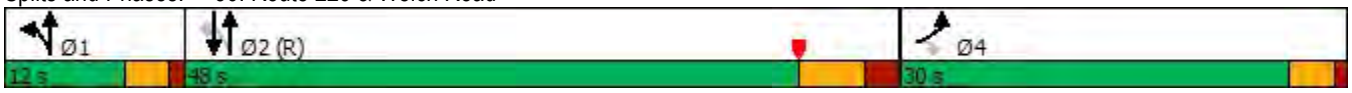
Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 23.7 Intersection LOS: C
Intersection Capacity Utilization 56.3% ICU Level of Service B
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 36: Route 229 & Welch Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	10	25	55	10	102	25	1173	210	215	1335	10
Future Volume (vph)	5	10	25	55	10	102	25	1173	210	215	1335	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			7%			0%	
Storage Length (ft)	250		0	0		95	205		0	205		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			100			25			180		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.893			0.864			0.977			0.999	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1663	0	1770	1609	0	1708	3337	0	1770	3536	0
Flt Permitted	0.447			0.950			0.180			0.099		
Satd. Flow (perm)	833	1663	0	1770	1609	0	324	3337	0	184	3536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			111			26			2	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		1101			991			3268			2348	
Travel Time (s)		25.0			22.5			55.7			40.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	11	27	60	11	111	27	1275	228	234	1451	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	38	0	60	122	0	27	1503	0	234	1462	0
Turn Type	Perm	NA		Prot	NA		Perm	NA		pm+pt	NA	
Protected Phases		4!		4!	8			2		1	1 2	
Permitted Phases	4						2			1 2		
Detector Phase	4	4		4	8		2	2		1	1 2	
Switch Phase												
Minimum Initial (s)	9.0	9.0		9.0	5.0		25.0	25.0		5.0		
Minimum Split (s)	20.0	20.0		20.0	22.5		32.6	32.6		9.0		
Total Split (s)	22.6	22.6		22.6	22.6		72.4	72.4		25.0		
Total Split (%)	18.8%	18.8%		18.8%	18.8%		60.3%	60.3%		20.8%		
Maximum Green (s)	18.6	18.6		18.6	18.1		64.8	64.8		21.0		
Yellow Time (s)	3.0	3.0		3.0	3.5		4.9	4.9		3.0		
All-Red Time (s)	1.0	1.0		1.0	1.0		2.7	2.7		1.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		
Total Lost Time (s)	4.0	4.0		4.0	4.5		7.6	7.6		4.0		
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.0	4.0		2.0		
Recall Mode	None	None		None	None		C-Min	C-Min		Min		
Walk Time (s)	15.0	15.0		15.0	7.0							
Flash Dont Walk (s)	1.0	1.0		1.0	11.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	10.3	10.3		10.3	9.8		71.5	71.5		97.7	101.7	
Actuated g/C Ratio	0.09	0.09		0.09	0.08		0.60	0.60		0.81	0.85	
v/c Ratio	0.07	0.23		0.40	0.52		0.14	0.75		0.52	0.49	
Control Delay	51.6	27.2		59.5	20.2		15.2	21.5		18.5	3.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	51.6	27.2		59.5	20.2		15.2	21.5		18.5	3.1	
LOS	D	C		E	C		B	C		B	A	
Approach Delay		30.1			33.2			21.4			5.2	
Approach LOS		C			C			C			A	
Queue Length 50th (ft)	4	8		45	8		9	408		59	103	
Queue Length 95th (ft)	17	42		88	66		29	588		143	165	
Internal Link Dist (ft)		1021			911			3188			2268	
Turn Bay Length (ft)	250						205			205		
Base Capacity (vph)	129	280		274	336		193	1999		465	2980	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.14		0.22	0.36		0.14	0.75		0.50	0.49	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 14.2	Intersection LOS: B
Intersection Capacity Utilization 81.2%	ICU Level of Service D
Analysis Period (min) 15	
! Phase conflict between lane groups.	

Splits and Phases: 38: Route 229 & W. Pine Drive/Spring Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	15	10	188	15	253	60	1131	198	288	1103	10
Future Volume (vph)	5	15	10	188	15	253	60	1131	198	288	1103	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	14	12	14	12	12	12	12	12	12
Grade (%)		0%			0%			0%			7%	
Storage Length (ft)	250		0	250		0	0		0	250		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.939			0.858			0.978			0.999	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1749	0	1888	1598	0	1770	3461	0	1708	3412	0
Flt Permitted	0.252			0.950			0.203			0.147		
Satd. Flow (perm)	469	1749	0	1888	1598	0	378	3461	0	264	3412	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			97			48			2	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		2534			992			424			3268	
Travel Time (s)		57.6			22.5			7.2			55.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	16	11	204	16	275	65	1229	215	313	1199	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	27	0	204	291	0	65	1444	0	313	1210	0
Turn Type	Perm	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases		4!		4!	8			2			2	
Permitted Phases	4						2			2		
Detector Phase	4	4		4	8		2	2		2	2	
Switch Phase												
Minimum Initial (s)	9.0	9.0		9.0	5.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	23.0	23.0		23.0	22.5		21.3	21.3		21.3	21.3	
Total Split (s)	23.0	23.0		23.0	23.0		67.0	67.0		67.0	67.0	
Total Split (%)	25.6%	25.6%		25.6%	25.6%		74.4%	74.4%		74.4%	74.4%	
Maximum Green (s)	19.0	19.0		19.0	18.5		60.7	60.7		60.7	60.7	
Yellow Time (s)	3.0	3.0		3.0	3.5		4.6	4.6		4.6	4.6	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.5		6.3	6.3		6.3	6.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5		1.5	3.0		2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)	18.0	18.0		18.0	7.0							
Flash Dont Walk (s)	1.0	1.0		1.0	11.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	15.9	15.9		15.9	15.4		63.8	63.8		63.8	63.8	
Actuated g/C Ratio	0.18	0.18		0.18	0.17		0.71	0.71		0.71	0.71	
v/c Ratio	0.06	0.09		0.61	0.82		0.24	0.59		1.67	0.50	
Control Delay	30.6	21.1		41.8	42.9		5.6	4.6		345.8	7.2	

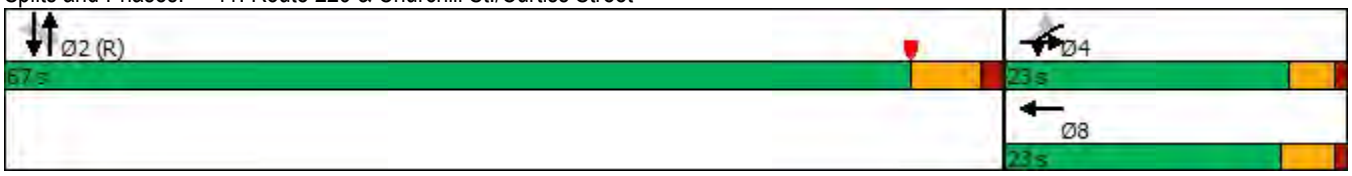
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	30.6	21.1		41.8	42.9		5.6	4.6		345.8	7.2	
LOS	C	C		D	D		A	A		F	A	
Approach Delay		22.6			42.4			4.7			76.8	
Approach LOS		C			D			A			E	
Queue Length 50th (ft)	2	7		106	105		7	77		~162	150	
Queue Length 95th (ft)	12	29		173	#213		m14	93		#331	205	
Internal Link Dist (ft)		2454			912			344			3188	
Turn Bay Length (ft)	250			250						250		
Base Capacity (vph)	99	377		398	405		267	2467		187	2419	
Starvation Cap Reductn	0	0		0	0		0	40		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.07		0.51	0.72		0.24	0.59		1.67	0.50	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 60.7 (67%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.67
Intersection Signal Delay: 40.9 Intersection LOS: D
Intersection Capacity Utilization 84.9% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
! Phase conflict between lane groups.

Splits and Phases: 41: Route 229 & Churchill St./Curtiss Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	0	54	30	0	18	71	1324	20	15	1229	57
Future Volume (vph)	47	0	54	30	0	18	71	1324	20	15	1229	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	65		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.928			0.949			0.998			0.993	
Flt Protected		0.977			0.970		0.950			0.950		
Satd. Flow (prot)	0	1689	0	0	1715	0	1770	3532	0	1770	3514	0
Flt Permitted		0.869			0.717		0.172			0.159		
Satd. Flow (perm)	0	1502	0	0	1267	0	320	3532	0	296	3514	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		57			41			4			12	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		287			281			412			424	
Travel Time (s)		6.5			6.4			7.0			7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	0	59	33	0	20	77	1439	22	16	1336	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	110	0	0	53	0	77	1461	0	16	1398	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	17.5	17.5		17.5	17.5		21.4	21.4		21.4	21.4	
Total Split (s)	21.0	21.0		21.0	21.0		69.0	69.0		69.0	69.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		76.7%	76.7%		76.7%	76.7%	
Maximum Green (s)	16.5	16.5		16.5	16.5		62.6	62.6		62.6	62.6	
Yellow Time (s)	3.4	3.4		3.4	3.4		4.9	4.9		4.9	4.9	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		6.4	6.4		6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Recall Mode	C-Min	C-Min		C-Min	C-Min		Max	Max		Max	Max	
Walk Time (s)	12.0	12.0		12.0	12.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		9.0			9.0		70.1	70.1		70.1	70.1	
Actuated g/C Ratio		0.10			0.10		0.78	0.78		0.78	0.78	
v/c Ratio		0.55			0.33		0.31	0.53		0.07	0.51	
Control Delay		30.5			20.9		7.3	4.8		2.1	2.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		30.5			20.9		7.3	4.8		2.1	2.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		C			C		A	A		A	A	
Approach Delay		30.5			20.9			5.0			2.4	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)		29			6		9	115		1	64	
Queue Length 95th (ft)		77			39		36	210		m2	79	
Internal Link Dist (ft)		207			201			332			344	
Turn Bay Length (ft)							100			65		
Base Capacity (vph)		321			265		249	2751		230	2739	
Starvation Cap Reductn		0			0		0	0		0	82	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.34			0.20		0.31	0.53		0.07	0.53	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 4:EBWB, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 5.0 Intersection LOS: A
Intersection Capacity Utilization 70.6% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 42: Route 229 & Corporate Drive/Centrion Plaza Drive

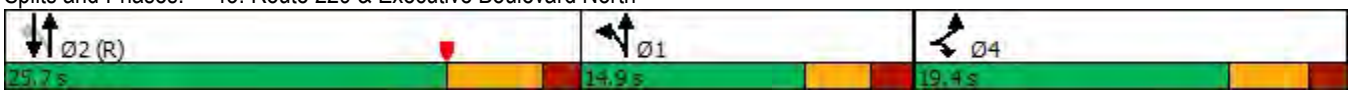
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	26	13	42	1389	1276	37
Future Volume (vph)	26	13	42	1389	1276	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	360	220			100
Storage Lanes	1	1	1			1
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.129			
Satd. Flow (perm)	1770	1583	240	3539	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		14				24
Link Speed (mph)	30			40	40	
Link Distance (ft)	694			570	291	
Travel Time (s)	15.8			9.7	5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	14	46	1510	1387	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	28	14	46	1510	1387	40
Turn Type	Prot	Prot	pm+pt	NA	NA	Perm
Protected Phases	4	4	1	1 2	2	
Permitted Phases			1 2			2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		15.0	15.0
Minimum Split (s)	12.4	12.4	8.9		21.0	21.0
Total Split (s)	19.4	19.4	14.9		25.7	25.7
Total Split (%)	32.3%	32.3%	24.8%		42.8%	42.8%
Maximum Green (s)	14.0	14.0	10.0		19.7	19.7
Yellow Time (s)	3.6	3.6	3.0		4.3	4.3
All-Red Time (s)	1.8	1.8	1.9		1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.4	5.4	4.9		6.0	6.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	2.5	2.5	2.0		0.2	0.2
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)	24.0	24.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	7.1	7.1	45.1	53.0	34.3	34.3
Actuated g/C Ratio	0.12	0.12	0.75	0.88	0.57	0.57
v/c Ratio	0.13	0.07	0.11	0.48	0.69	0.04
Control Delay	25.3	13.7	3.6	3.0	14.0	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.3	13.7	3.6	3.0	14.0	5.7

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
LOS	C	B	A	A	B	A
Approach Delay	21.4			3.1	13.8	
Approach LOS	C			A	B	
Queue Length 50th (ft)	9	0	0	0	124	2
Queue Length 95th (ft)	29	14	m0	228	#371	17
Internal Link Dist (ft)	614			490	211	
Turn Bay Length (ft)		360	220			100
Base Capacity (vph)	413	380	436	3081	2021	914
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.04	0.11	0.49	0.69	0.04

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 59 (98%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 8.4 Intersection LOS: A
Intersection Capacity Utilization 52.8% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 43: Route 229 & Executive Boulevard North



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	120	100	150	1301	1189	100
Future Volume (vph)	120	100	150	1301	1189	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			5%	0%	
Storage Length (ft)	860	370	335			250
Storage Lanes	1	1	2			1
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	0.88	0.97	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	2787	3347	3451	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	2787	3347	3451	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		49				109
Link Speed (mph)	30			40	40	
Link Distance (ft)	945			579	570	
Travel Time (s)	21.5			9.9	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	109	163	1414	1292	109
Shared Lane Traffic (%)						
Lane Group Flow (vph)	130	109	163	1414	1292	109
Turn Type	Prot	pt+ov	Prot	NA	NA	pm+ov
Protected Phases	4	1 4	1	1 2	2	4
Permitted Phases		1 4				2
Detector Phase	4	1 4	1	1 2	2	4
Switch Phase						
Minimum Initial (s)	7.0		4.0		15.0	7.0
Minimum Split (s)	12.4		8.6		20.8	12.4
Total Split (s)	12.4		13.2		34.4	12.4
Total Split (%)	20.7%		22.0%		57.3%	20.7%
Maximum Green (s)	7.0		8.6		28.6	7.0
Yellow Time (s)	3.6		3.0		4.3	3.6
All-Red Time (s)	1.8		1.6		1.5	1.8
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.4		4.6		5.8	5.4
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.5		2.0		0.2	2.5
Recall Mode	None		None		C-Max	None
Walk Time (s)	22.0					22.0
Flash Dont Walk (s)	1.0					1.0
Pedestrian Calls (#/hr)	0					0
Act Effct Green (s)	7.0	18.5	8.6	46.4	31.1	43.9
Actuated g/C Ratio	0.12	0.31	0.14	0.77	0.52	0.73
v/c Ratio	0.63	0.12	0.34	0.53	0.70	0.09
Control Delay	41.5	8.6	23.1	6.5	9.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Delay	41.5	8.6	23.1	6.5	9.9	0.1
LOS	D	A	C	A	A	A
Approach Delay	26.5			8.2	9.2	
Approach LOS	C			A	A	
Queue Length 50th (ft)	46	7	29	132	42	0
Queue Length 95th (ft)	#113	23	m45	m176	120	m0
Internal Link Dist (ft)	865			499	490	
Turn Bay Length (ft)	860	370	335			250
Base Capacity (vph)	206	894	479	2618	1835	1188
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.12	0.34	0.54	0.70	0.09

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 10.0	Intersection LOS: A
Intersection Capacity Utilization 57.0%	ICU Level of Service B
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 44: Route 229 & Executive Boulevard South

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	160	0	484	40	959	0	0	647	647
Future Volume (vph)	0	0	0	160	0	484	40	959	0	0	647	647
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			5%	
Storage Length (ft)	0		0	240		440	90		0	0		250
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			100			100			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950	0.950		0.950					
Satd. Flow (prot)	0	0	0	1681	1681	1583	1770	3539	0	0	3451	1544
Flt Permitted				0.950	0.950		0.322					
Satd. Flow (perm)	0	0	0	1681	1681	1583	600	3539	0	0	3451	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						131						703
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		337			747			508			579	
Travel Time (s)		7.7			17.0			8.7			9.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	174	0	526	43	1042	0	0	703	703
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	0	0	87	87	526	43	1042	0	0	703	703
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					4		1	1 2			2	
Permitted Phases				4		4	1 2					2
Detector Phase				4	4	4	1	1 2			2	2
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0	5.0				15.0	15.0
Minimum Split (s)				12.7	12.7	12.7	9.0				21.2	21.2
Total Split (s)				20.7	20.7	20.7	11.0				28.3	28.3
Total Split (%)				34.5%	34.5%	34.5%	18.3%				47.2%	47.2%
Maximum Green (s)				15.0	15.0	15.0	7.0				22.1	22.1
Yellow Time (s)				3.0	3.0	3.0	3.0				4.3	4.3
All-Red Time (s)				2.7	2.7	2.7	1.0				1.9	1.9
Lost Time Adjust (s)				0.0	0.0	0.0	0.0				0.0	0.0
Total Lost Time (s)				5.7	5.7	5.7	4.0				6.2	6.2
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)				2.0	2.0	2.0	2.0				0.2	0.2
Recall Mode				None	None	None	None				C-Max	C-Max
Act Effct Green (s)				15.0	15.0	15.0	31.3	35.3			22.1	22.1
Actuated g/C Ratio				0.25	0.25	0.25	0.52	0.59			0.37	0.37
v/c Ratio				0.21	0.21	1.06	0.10	0.50			0.55	0.69
Control Delay				19.4	19.4	79.9	5.9	8.3			12.3	11.2
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				19.4	19.4	79.9	5.9	8.3			12.3	11.2
LOS				B	B	E	A	A			B	B
Approach Delay					64.9			8.2			11.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS					E			A			B	
Queue Length 50th (ft)				26	26	~177	6	101			130	194
Queue Length 95th (ft)				58	58	#346	16	142			159	312
Internal Link Dist (ft)		257			667			428			499	
Turn Bay Length (ft)				240		440	90					250
Base Capacity (vph)				420	420	494	449	2082			1271	1012
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.21	0.21	1.06	0.10	0.50			0.55	0.69

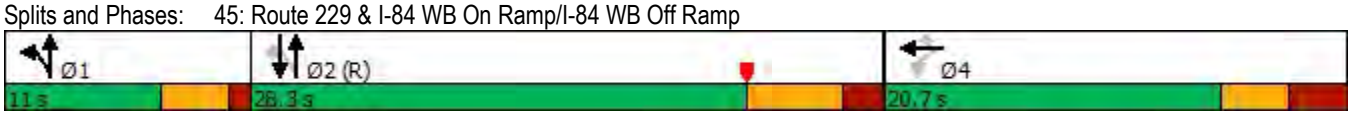
Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 20 (33%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 22.2 Intersection LOS: C
Intersection Capacity Utilization 64.6% ICU Level of Service C
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 45: Route 229 & I-84 WB On Ramp/I-84 WB Off Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	790	74	371	1035	10	503	0	404	5	10	5
Future Volume (vph)	5	790	74	371	1035	10	503	0	404	5	10	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	150		150	0		0
Storage Lanes	0		1	0		0	1		1	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.999				0.850		0.968	
Flt Protected					0.987		0.950	0.950			0.988	
Satd. Flow (prot)	0	3539	1583	0	3490	0	1681	1681	1583	0	1781	0
Flt Permitted		0.942			0.553		0.950	0.950			0.988	
Satd. Flow (perm)	0	3334	1583	0	1955	0	1681	1681	1583	0	1781	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			123		1				173		5	
Link Speed (mph)		35			35			35			30	
Link Distance (ft)		363			299			709			169	
Travel Time (s)		7.1			5.8			13.8			3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	859	80	403	1125	11	547	0	439	5	11	5
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	864	80	0	1539	0	273	274	439	0	21	0
Turn Type	Perm	NA	Perm	D.P+P	NA		Split	NA	pm+ov	Split	NA	
Protected Phases		2		1	1 2		5	5	1	4	4	
Permitted Phases	2		2	2					5			
Detector Phase	2	2	2	1	1 2		5	5	1	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	7.0			9.0	9.0	7.0	5.0	5.0	
Minimum Split (s)	22.4	22.4	22.4	11.0			13.0	13.0	11.0	24.3	24.3	
Total Split (s)	54.0	54.0	54.0	10.0			25.0	25.0	10.0	11.0	11.0	
Total Split (%)	54.0%	54.0%	54.0%	10.0%			25.0%	25.0%	10.0%	11.0%	11.0%	
Maximum Green (s)	46.6	46.6	46.6	6.0			21.0	21.0	6.0	4.7	4.7	
Yellow Time (s)	4.4	4.4	4.4	3.0			3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0	3.0	1.0			1.0	1.0	1.0	3.3	3.3	
Lost Time Adjust (s)		0.0	0.0				0.0	0.0	0.0		0.0	
Total Lost Time (s)		7.4	7.4				4.0	4.0	4.0		6.3	
Lead/Lag	Lag	Lag	Lag	Lead					Lead			
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2	0.2	0.2			3.0	3.0	0.2	1.5	1.5	
Recall Mode	C-Max	C-Max	C-Max	Min			Min	Min	Min	None	None	
Walk Time (s)										17.0	17.0	
Flash Dont Walk (s)										1.0	1.0	
Pedestrian Calls (#/hr)										0	0	
Act Effct Green (s)		46.6	46.6		64.3		19.3	19.3	36.0		4.8	
Actuated g/C Ratio		0.47	0.47		0.64		0.19	0.19	0.36		0.05	
v/c Ratio		0.56	0.10		1.04		0.84	0.84	0.65		0.23	
Control Delay		21.0	1.2		53.5		61.5	61.9	19.0		44.6	
Queue Delay		0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Delay		21.0	1.2		53.5		61.5	61.9	19.0		44.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		C	A		D		E	E	B		D	
Approach Delay		19.3			53.5			42.7			44.6	
Approach LOS		B			D			D			D	
Queue Length 50th (ft)		202	0		232		173	174	123		10	
Queue Length 95th (ft)		261	9		#807		#302	#304	#253		35	
Internal Link Dist (ft)		283			219			629			89	
Turn Bay Length (ft)			150				150		150			
Base Capacity (vph)		1553	803		1475		353	353	680		90	
Starvation Cap Reductn		0	0		0		0	0	0		0	
Spillback Cap Reductn		0	0		0		0	0	0		0	
Storage Cap Reductn		0	0		0		0	0	0		0	
Reduced v/c Ratio		0.56	0.10		1.04		0.77	0.78	0.65		0.23	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 54 (54%), Referenced to phase 2:EBWB, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 41.1 Intersection LOS: D
Intersection Capacity Utilization 95.1% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Route 229/Driveway & Route 6

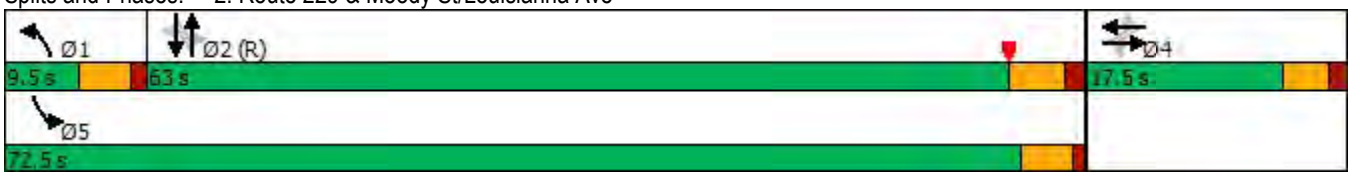
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	35	80	120	80	1	10	989	148	36	807	0
Future Volume (vph)	10	35	80	120	80	1	10	989	148	36	807	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	200		0	200		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.914			0.998			0.980				
Flt Protected		0.996		0.950			0.950			0.950		
Satd. Flow (prot)	0	1696	0	1770	1859	0	1681	1734	0	1770	1863	0
Flt Permitted		0.974		0.518			0.220			0.000		
Satd. Flow (perm)	0	1658	0	965	1859	0	389	1734	0	0	1863	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		859			830			899			709	
Travel Time (s)		19.5			18.9			17.5			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	38	87	130	87	1	11	1075	161	39	877	0
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	0	136	0	130	88	0	10	1237	0	39	877	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	2!		5!	2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		1	2		5	2	
Switch Phase												
Minimum Initial (s)	9.0	9.0		9.0	9.0		5.0	20.0		5.0	20.0	
Minimum Split (s)	13.4	13.4		13.4	13.4		9.5	36.3		9.5	36.3	
Total Split (s)	17.5	17.5		17.5	17.5		9.5	63.0		72.5	63.0	
Total Split (%)	19.4%	19.4%		19.4%	19.4%		10.6%	70.0%		80.6%	70.0%	
Maximum Green (s)	13.1	13.1		13.1	13.1		5.0	57.7		68.0	57.7	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.5	3.8		3.5	3.8	
All-Red Time (s)	1.4	1.4		1.4	1.4		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.4		4.4	4.4		4.5	5.3		4.5	5.3	
Lead/Lag							Lead	Lag			Lag	
Lead-Lag Optimize?							Yes	Yes			Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)								20.0			20.0	
Flash Dont Walk (s)								4.0			4.0	
Pedestrian Calls (#/hr)								0			0	
Act Effct Green (s)		13.1		13.1	13.1		67.1	67.2		68.0	65.3	
Actuated g/C Ratio		0.15		0.15	0.15		0.75	0.75		0.76	0.73	
v/c Ratio		0.56		0.93	0.33		0.03	0.96		0.03	0.65	
Control Delay		45.8		100.4	38.3		3.4	19.0		2.8	10.1	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.5	
Total Delay		45.8		100.4	38.3		3.4	19.0		2.8	10.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		D		F	D		A	B		A	B	
Approach Delay		45.8			75.3			18.9			10.3	
Approach LOS		D			E			B			B	
Queue Length 50th (ft)		73		74	46		1	195		4	194	
Queue Length 95th (ft)		132		#184	90		m2	#992		11	457	
Internal Link Dist (ft)		779			750			819			629	
Turn Bay Length (ft)				100			200			200		
Base Capacity (vph)		241		140	270		361	1294		1337	1352	
Starvation Cap Reductn		0		0	0		0	0		0	164	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.56		0.93	0.33		0.03	0.96		0.03	0.74	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 22.1 Intersection LOS: C
Intersection Capacity Utilization 64.5% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
! Phase conflict between lane groups.

Splits and Phases: 2: Route 229 & Moody St/Louisianna Ave



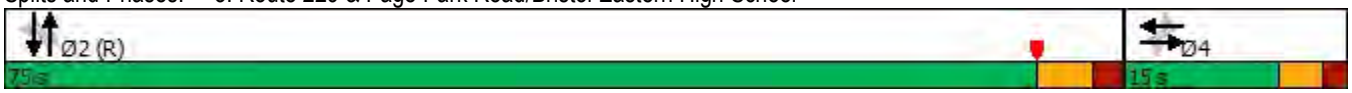
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	0	10	30	0	15	35	1125	30	15	1002	20
Future Volume (vph)	15	0	10	30	0	15	35	1125	30	15	1002	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.945			0.956			0.996			0.997	
Flt Protected		0.971			0.967		0.950			0.950		
Satd. Flow (prot)	0	1709	0	0	1722	0	1770	1855	0	1770	1857	0
Flt Permitted		0.835			0.781		0.180			0.114		
Satd. Flow (perm)	0	1470	0	0	1391	0	335	1855	0	212	1857	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			35			5			3	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		480			517			662			899	
Travel Time (s)		10.9			11.8			12.9			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	0	11	33	0	16	38	1223	33	16	1089	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	27	0	0	49	0	38	1256	0	16	1111	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	14.7	14.7		14.7	14.7		40.9	40.9		40.9	40.9	
Total Split (s)	15.0	15.0		15.0	15.0		75.0	75.0		75.0	75.0	
Total Split (%)	16.7%	16.7%		16.7%	16.7%		83.3%	83.3%		83.3%	83.3%	
Maximum Green (s)	10.3	10.3		10.3	10.3		69.1	69.1		69.1	69.1	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.8	3.8		3.8	3.8	
All-Red Time (s)	1.7	1.7		1.7	1.7		2.1	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.7			4.7		5.9	5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)							24.0	24.0		24.0	24.0	
Flash Dont Walk (s)							4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)		10.0			10.0		73.5	73.5		73.5	73.5	
Actuated g/C Ratio		0.11			0.11		0.82	0.82		0.82	0.82	
v/c Ratio		0.14			0.26		0.14	0.83		0.09	0.73	
Control Delay		11.9			21.3		3.3	6.7		3.4	6.5	
Queue Delay		0.0			0.0		0.0	1.1		0.0	0.1	
Total Delay		11.9			21.4		3.3	7.8		3.4	6.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		B			C		A	A		A	A	
Approach Delay		11.9			21.4			7.7			6.6	
Approach LOS		B			C			A			A	
Queue Length 50th (ft)		0			7		4	211		1	226	
Queue Length 95th (ft)		20			41		m5	m223		m3	m328	
Internal Link Dist (ft)		400			437			582			819	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		199			190		273	1516		173	1517	
Starvation Cap Reductn		0			0		0	97		0	0	
Spillback Cap Reductn		1			1		0	71		0	44	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.14			0.26		0.14	0.89		0.09	0.75	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 7.5 Intersection LOS: A
Intersection Capacity Utilization 78.2% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Route 229 & Page Park Road/Bristol Eastern High School



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	30	1066	1002	35	124	37
Future Volume (vph)	30	1066	1002	35	124	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.995		0.969	
Flt Protected		0.999			0.963	
Satd. Flow (prot)	0	1861	1853	0	1738	0
Flt Permitted		0.851			0.963	
Satd. Flow (perm)	0	1585	1853	0	1738	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			4		15	
Link Speed (mph)		35	35		30	
Link Distance (ft)		1271	662		359	
Travel Time (s)		24.8	12.9		8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	1159	1089	38	135	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1192	1127	0	175	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	2		4	
Permitted Phases	2					
Detector Phase	2	2	2		4	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0		10.0	
Minimum Split (s)	40.0	40.0	40.0		24.5	
Total Split (s)	65.5	65.5	65.5		24.5	
Total Split (%)	72.8%	72.8%	72.8%		27.2%	
Maximum Green (s)	60.5	60.5	60.5		20.5	
Yellow Time (s)	4.0	4.0	4.0		3.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		5.0	5.0		4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	5.0	5.0	5.0		3.0	
Recall Mode	C-Min	C-Min	C-Min		None	
Walk Time (s)	21.0	21.0	21.0			
Flash Dont Walk (s)	4.0	4.0	4.0			
Pedestrian Calls (#/hr)	0	0	0			
Act Effct Green (s)		67.0	67.0		14.0	
Actuated g/C Ratio		0.74	0.74		0.16	
v/c Ratio		1.01	0.82		0.62	
Control Delay		43.3	8.9		41.7	
Queue Delay		4.4	0.0		0.0	
Total Delay		47.7	8.9		41.7	
LOS		D	A		D	
Approach Delay		47.7	8.9		41.7	
Approach LOS		D	A		D	

Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Queue Length 50th (ft)		~566	89		86	
Queue Length 95th (ft)		#1016	#815		143	
Internal Link Dist (ft)		1191	582		279	
Turn Bay Length (ft)						
Base Capacity (vph)		1180	1381		407	
Starvation Cap Reductn		0	5		0	
Spillback Cap Reductn		17	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		1.02	0.82		0.43	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 29.7 Intersection LOS: C
Intersection Capacity Utilization 96.9% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

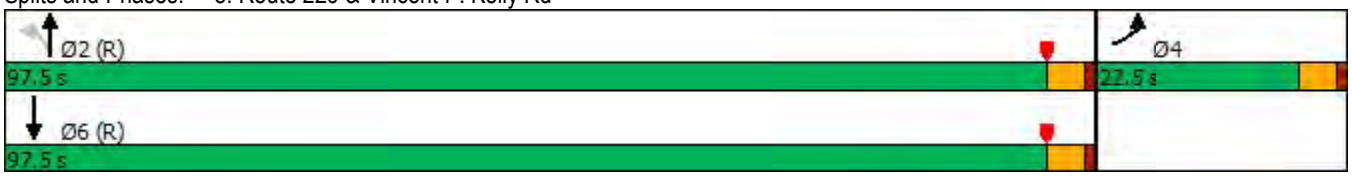
Splits and Phases: 4: Woodland Street & Route 229

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	20	55	50	1660	1321	30
Future Volume (vph)	20	55	50	1660	1321	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.901				0.997	
Flt Protected	0.987			0.999		
Satd. Flow (prot)	1657	0	0	3536	3529	0
Flt Permitted	0.987			0.816		
Satd. Flow (perm)	1657	0	0	2888	3529	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	60				6	
Link Speed (mph)	30			40	40	
Link Distance (ft)	832			624	268	
Travel Time (s)	18.9			10.6	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	60	54	1804	1436	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	82	0	0	1858	1469	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	22.5		22.5	22.5	22.5	
Total Split (s)	22.5		97.5	97.5	97.5	
Total Split (%)	18.8%		81.3%	81.3%	81.3%	
Maximum Green (s)	18.0		93.0	93.0	93.0	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	4.5			4.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		C-Max	C-Max	C-Max	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	7.8			106.1	106.1	
Actuated g/C Ratio	0.06			0.88	0.88	
v/c Ratio	0.50			0.73	0.47	
Control Delay	30.5			9.2	2.7	
Queue Delay	0.0			0.1	0.0	
Total Delay	30.5			9.3	2.7	
LOS	C			A	A	
Approach Delay	30.5			9.3	2.7	
Approach LOS	C			A	A	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 50th (ft)	17			245	95	
Queue Length 95th (ft)	66			m314	171	
Internal Link Dist (ft)	752			544	188	
Turn Bay Length (ft)						
Base Capacity (vph)	299			2554	3121	
Starvation Cap Reductn	0			54	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.27			0.74	0.47	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 6.9	Intersection LOS: A
Intersection Capacity Utilization 94.0%	ICU Level of Service F
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 8: Route 229 & Vincent P. Kelly Rd



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	196	189	893	179	145	915
Future Volume (vph)	196	189	893	179	145	915
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	160	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.934		0.977			
Flt Protected	0.975				0.950	
Satd. Flow (prot)	1696	0	1820	0	1770	1863
Flt Permitted	0.975				0.950	
Satd. Flow (perm)	1696	0	1820	0	1770	1863
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	36		14			
Link Speed (mph)	30		35			35
Link Distance (ft)	835		2121			1598
Travel Time (s)	19.0		41.3			31.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	213	205	971	195	158	995
Shared Lane Traffic (%)						
Lane Group Flow (vph)	418	0	1166	0	158	995
Turn Type	Prot		NA		Prot	NA
Protected Phases	4		2		1	1 2
Permitted Phases						
Detector Phase	4		2		1	1 2
Switch Phase						
Minimum Initial (s)	9.0		15.0		5.0	
Minimum Split (s)	25.0		37.9		9.0	
Total Split (s)	27.0		75.0		18.0	
Total Split (%)	22.5%		62.5%		15.0%	
Maximum Green (s)	23.0		69.1		14.0	
Yellow Time (s)	3.0		4.0		3.0	
All-Red Time (s)	1.0		1.9		1.0	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	4.0		5.9		4.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		4.0		1.0	
Recall Mode	None		C-Min		None	
Walk Time (s)	17.0		22.0			
Flash Dont Walk (s)	4.0		4.0			
Pedestrian Calls (#/hr)	0		0			
Act Effct Green (s)	23.0		69.1		14.0	89.0
Actuated g/C Ratio	0.19		0.58		0.12	0.74
v/c Ratio	1.18		1.11		0.77	0.72
Control Delay	145.8		93.0		75.6	12.4
Queue Delay	0.0		0.0		0.0	0.0
Total Delay	145.8		93.0		75.6	12.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS	F		F		E	B
Approach Delay	145.8		93.0			21.0
Approach LOS	F		F			C
Queue Length 50th (ft)	~366		~971		120	371
Queue Length 95th (ft)	#569		#1247		#227	523
Internal Link Dist (ft)	755		2041			1518
Turn Bay Length (ft)					160	
Base Capacity (vph)	354		1053		206	1381
Starvation Cap Reductn	0		0		0	0
Spillback Cap Reductn	0		0		0	0
Storage Cap Reductn	0		0		0	0
Reduced v/c Ratio	1.18		1.11		0.77	0.72

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 70.7	Intersection LOS: E
Intersection Capacity Utilization 99.9%	ICU Level of Service F
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Route 229 & West Washington Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	400	115	1092	222	50	927
Future Volume (vph)	400	115	1092	222	50	927
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	490	325		130	220	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	1583	3539	1583	1770	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		125		241		
Link Speed (mph)	30		30			30
Link Distance (ft)	911		424			459
Travel Time (s)	20.7		9.6			10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	435	125	1187	241	54	1008
Shared Lane Traffic (%)						
Lane Group Flow (vph)	435	125	1187	241	54	1008
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4	2	4	1	1 2
Permitted Phases				2		
Detector Phase	4	4	2	4	1	1 2
Switch Phase						
Minimum Initial (s)	6.0	6.0	15.0	6.0	6.0	
Minimum Split (s)	25.0	25.0	20.9	25.0	10.9	
Total Split (s)	29.0	29.0	70.0	29.0	21.0	
Total Split (%)	24.2%	24.2%	58.3%	24.2%	17.5%	
Maximum Green (s)	25.0	25.0	64.1	25.0	16.1	
Yellow Time (s)	3.0	3.0	4.9	3.0	3.3	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	5.9	4.0	4.9	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	3.0	2.0	3.0	
Recall Mode	None	None	C-Min	None	None	
Walk Time (s)	1.0	1.0		1.0		
Flash Dont Walk (s)	20.0	20.0		20.0		
Pedestrian Calls (#/hr)	0	0		0		
Act Effct Green (s)	19.6	19.6	67.4	92.9	18.2	91.5
Actuated g/C Ratio	0.16	0.16	0.56	0.77	0.15	0.76
v/c Ratio	0.78	0.34	0.60	0.19	0.20	0.37
Control Delay	57.7	9.7	18.4	1.5	44.2	5.8
Queue Delay	0.3	0.0	0.6	0.0	0.0	0.0
Total Delay	58.0	9.7	19.0	1.5	44.2	5.8

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS	E	A	B	A	D	A
Approach Delay	47.2		16.1			7.8
Approach LOS	D		B			A
Queue Length 50th (ft)	168	0	199	14	37	91
Queue Length 95th (ft)	213	51	278	m21	m51	m182
Internal Link Dist (ft)	831		344			379
Turn Bay Length (ft)	490	325		130	220	
Base Capacity (vph)	715	428	1987	1340	271	2674
Starvation Cap Reductn	0	0	402	0	0	0
Spillback Cap Reductn	41	0	0	0	0	117
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.29	0.75	0.18	0.20	0.39

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 18.9 Intersection LOS: B
Intersection Capacity Utilization 58.9% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Route 229 & Broad Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	274	575	420	30	720	171	376	869	20	216	689	417
Future Volume (vph)	274	575	420	30	720	171	376	869	20	216	689	417
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	525		765	65		300	400		0	200		275
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	150			135			90			75		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850			0.850		0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	1770	3539	1583	1770	3529	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1863	1583	1770	3539	1583	1770	3529	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			125			151		2				58
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		918			774			907			424	
Travel Time (s)		20.9			17.6			20.6			9.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	298	625	457	33	783	186	409	945	22	235	749	453
Shared Lane Traffic (%)												
Lane Group Flow (vph)	298	625	457	33	783	186	409	967	0	235	749	453
Turn Type	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA		Prot	NA	pt+ov
Protected Phases	7	4	4 1	3	8	5 8	1	6		5	2	2 7
Permitted Phases												
Detector Phase	7	4	4 1	3	8	5 8	1	6		5	2	2 7
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	15.0		6.0	15.0	
Minimum Split (s)	11.2	28.4		10.0	28.4		10.0	21.4		10.0	21.4	
Total Split (s)	18.6	45.0		10.0	36.4		31.0	44.0		21.0	34.0	
Total Split (%)	15.5%	37.5%		8.3%	30.3%		25.8%	36.7%		17.5%	28.3%	
Maximum Green (s)	13.4	39.6		6.0	31.0		27.0	37.6		17.0	27.6	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	4.9		3.0	4.9	
All-Red Time (s)	2.2	1.7		1.0	1.7		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.4		4.0	5.4		4.0	6.4		4.0	6.4	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		22.0			22.0							
Flash Dont Walk (s)		1.0			1.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	12.9	43.1	74.6	6.0	31.1	50.4	27.5	37.1		18.0	27.6	45.7
Actuated g/C Ratio	0.11	0.36	0.62	0.05	0.26	0.42	0.23	0.31		0.15	0.23	0.38
v/c Ratio	0.81	0.93	0.44	0.38	0.85	0.25	1.01	0.89		0.89	0.92	0.71
Control Delay	69.8	60.3	10.4	67.6	52.8	4.0	75.2	34.2		80.4	60.8	29.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	1.8	2.4
Total Delay	69.8	60.3	10.4	67.6	52.8	4.0	75.2	34.2		80.4	62.6	31.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	E	B	E	D	A	E	C		F	E	C
Approach Delay		45.9			44.2			46.4			55.8	
Approach LOS		D			D			D			E	
Queue Length 50th (ft)	117	~498	133	25	304	11	~306	314		165	291	220
Queue Length 95th (ft)	#180	#738	212	60	#402	40	m#445	m#423		#335	#406	227
Internal Link Dist (ft)		838			694			827			344	
Turn Bay Length (ft)	525		765	65		300	400			200		275
Base Capacity (vph)	383	669	1031	88	916	752	405	1107		264	813	645
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	18	95
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.78	0.93	0.44	0.38	0.85	0.25	1.01	0.87		0.89	0.94	0.82

Intersection Summary

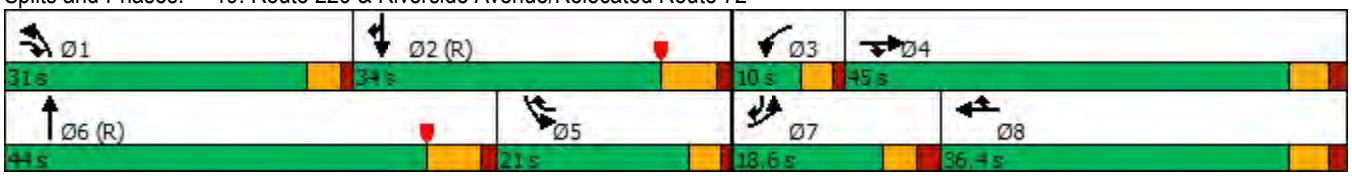
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 48.4 Intersection LOS: D
Intersection Capacity Utilization 91.6% ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Route 229 & Riverside Avenue/Relocated Route 72



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	485	345	262	790	125	580	1057	330	128	923	88
Future Volume (vph)	79	485	345	262	790	125	580	1057	330	128	923	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	240		240	400		0	300		75
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (ft)	150			150			70			90		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	0.97	0.95	0.95
Frt		0.938			0.979			0.964			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3320	0	1770	3465	0	1770	3412	0	3433	3493	0
Flt Permitted	0.145			0.127						0.082		
Satd. Flow (perm)	270	3320	0	237	3465	0	1863	3412	0	296	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		92			15			50			13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		669			802			666			907	
Travel Time (s)		15.2			18.2			15.1			20.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	527	375	285	859	136	630	1149	359	139	1003	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	902	0	285	995	0	630	1508	0	139	1099	0
Turn Type	pm+pt	NA		pm+pt	NA		D.P+P	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1 2!	2 5!		1!	5!	
Permitted Phases	4			8			5			5		
Detector Phase	7	4		3	8		1 2	2 5		1	5	
Switch Phase												
Minimum Initial (s)	4.0	7.0		4.0	7.0					4.0	15.0	
Minimum Split (s)	8.2	13.0		8.2	13.0					11.3	45.2	
Total Split (s)	10.0	32.8		19.0	41.8					13.2	68.2	
Total Split (%)	8.3%	27.3%		15.8%	34.8%					11.0%	56.8%	
Maximum Green (s)	6.0	26.8		15.0	35.8					9.0	64.0	
Yellow Time (s)	3.0	3.8		3.0	3.8					3.2	3.2	
All-Red Time (s)	1.0	2.2		1.0	2.2					1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0					4.2	4.2	
Lead/Lag	Lead	Lag		Lead	Lag					Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0					2.0	3.0	
Recall Mode	None	None		None	None					None	C-Min	
Walk Time (s)											37.0	
Flash Dont Walk (s)											4.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)	34.7	26.8		47.8	37.8		64.0	60.9		64.0	64.0	
Actuated g/C Ratio	0.29	0.22		0.40	0.32		0.53	0.51		0.53	0.53	
v/c Ratio	0.57	1.11		1.00	0.90		0.63	0.86		0.35	0.59	
Control Delay	39.9	105.4		84.7	51.7		21.8	28.6		23.2	34.2	
Queue Delay	0.0	0.0		0.0	0.0		0.8	1.4		0.0	0.0	
Total Delay	39.9	105.4		84.7	51.7		22.5	30.0		23.2	34.2	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	55.3
Total Split (s)	55.0
Total Split (%)	46%
Maximum Green (s)	47.7
Yellow Time (s)	4.9
All-Red Time (s)	2.4
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Min
Walk Time (s)	37.0
Flash Dont Walk (s)	4.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	F		F	D		C	C		C	C	
Approach Delay		99.7			59.0			27.8			33.0	
Approach LOS		F			E			C			C	
Queue Length 50th (ft)	42	~390		169	392		383	234		41	425	
Queue Length 95th (ft)	77	#523		#352	#530		299	228		m53	m478	
Internal Link Dist (ft)		589			722			586			827	
Turn Bay Length (ft)	200			240			400			300		
Base Capacity (vph)	153	812		286	1101		993	1756		393	1869	
Starvation Cap Reductn	0	0		0	0		135	108		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.56	1.11		1.00	0.90		0.73	0.92		0.35	0.59	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 5:NBSB, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.11
Intersection Signal Delay: 48.6 Intersection LOS: D
Intersection Capacity Utilization 114.8% ICU Level of Service H
Analysis Period (min) 15

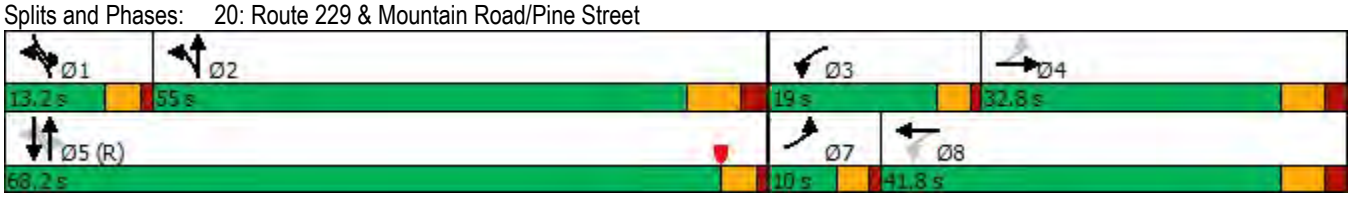
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

! Phase conflict between lane groups.

Splits and Phases: 20: Route 229 & Mountain Road/Pine Street



Lane Group	Ø2
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

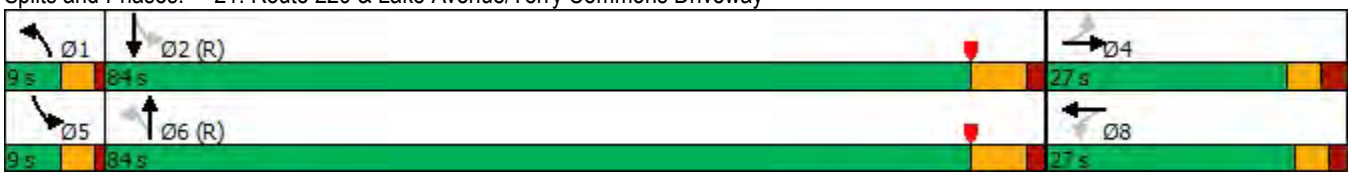
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	10	32	22	10	5	40	1721	65	5	1275	255
Future Volume (vph)	241	10	32	22	10	5	40	1721	65	5	1275	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	130		0	70		0	55		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			25			50			70		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.966			0.953			0.995			0.975	
Flt Protected	0.950	0.966		0.950			0.950			0.950		
Satd. Flow (prot)	1681	1651	0	1770	1775	0	1770	3522	0	1770	3451	0
Flt Permitted	0.747	0.782		0.490			0.092			0.062		
Satd. Flow (perm)	1322	1337	0	913	1775	0	171	3522	0	115	3451	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			5			6			39	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		650			212			757			666	
Travel Time (s)		14.8			4.8			17.2			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	262	11	35	24	11	5	43	1871	71	5	1386	277
Shared Lane Traffic (%)	41%											
Lane Group Flow (vph)	155	153	0	24	16	0	43	1942	0	5	1663	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	24.5	24.5		23.8	23.8		9.0	57.7		9.0	57.7	
Total Split (s)	27.0	27.0		27.0	27.0		9.0	84.0		9.0	84.0	
Total Split (%)	22.5%	22.5%		22.5%	22.5%		7.5%	70.0%		7.5%	70.0%	
Maximum Green (s)	21.5	21.5		22.2	22.2		5.0	77.3		5.0	77.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	4.9		3.0	4.9	
All-Red Time (s)	2.5	2.5		1.8	1.8		1.0	1.8		1.0	1.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		4.8	4.8		4.0	6.7		4.0	6.7	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)	15.0	15.0		15.0	15.0			31.0			31.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effct Green (s)	17.5	17.5		18.2	18.2		92.2	88.5		90.0	83.1	
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.77	0.74		0.75	0.69	
v/c Ratio	0.81	0.75		0.17	0.06		0.22	0.75		0.03	0.69	
Control Delay	78.5	67.1		45.4	32.9		7.3	15.7		1.8	6.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.1	
Total Delay	78.5	67.1		45.4	32.9		7.3	15.7		1.8	6.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	E		D	C		A	B		A	A	
Approach Delay		72.8			40.4			15.5			6.2	
Approach LOS		E			D			B			A	
Queue Length 50th (ft)	122	111		16	7		8	470		0	132	
Queue Length 95th (ft)	#202	186		42	27		m15	523		m1	m248	
Internal Link Dist (ft)		570			132			677			586	
Turn Bay Length (ft)	200			130			70			55		
Base Capacity (vph)	236	248		168	332		198	2599		159	2401	
Starvation Cap Reductn	0	0		0	0		0	0		0	68	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.66	0.62		0.14	0.05		0.22	0.75		0.03	0.71	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 16.3 Intersection LOS: B
Intersection Capacity Utilization 74.4% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Route 229 & Lake Avenue/Terry Commons Driveway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	20	35	46	10	141	60	1665	64	54	1255	35
Future Volume (vph)	35	20	35	46	10	141	60	1665	64	54	1255	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		175	60		0	180		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			75			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.948				0.850		0.994			0.996	
Flt Protected		0.981			0.961		0.950			0.950		
Satd. Flow (prot)	0	1732	0	0	1790	1583	1770	3518	0	1770	3525	0
Flt Permitted		0.846			0.537		0.132			0.052		
Satd. Flow (perm)	0	1494	0	0	1000	1583	246	3518	0	97	3525	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21				89		6			4	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		674			483			840			981	
Travel Time (s)		15.3			11.0			14.3			22.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	22	38	50	11	153	65	1810	70	59	1364	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	98	0	0	61	153	65	1880	0	59	1402	0
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		7			4 7		5	2		1	6	
Permitted Phases	7			4 7		4 7	2			6		
Detector Phase	7	7		4 7	4 7	4 7	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0					5.0	15.0		5.0	15.0	
Minimum Split (s)	10.8	10.8					9.0	21.1		9.0	21.1	
Total Split (s)	18.0	18.0					10.0	80.0		9.0	79.0	
Total Split (%)	15.0%	15.0%					8.3%	66.7%		7.5%	65.8%	
Maximum Green (s)	12.2	12.2					6.0	73.9		5.0	72.9	
Yellow Time (s)	3.0	3.0					3.0	4.2		3.0	4.2	
All-Red Time (s)	2.8	2.8					1.0	1.9		1.0	1.9	
Lost Time Adjust (s)		0.0					0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.8					4.0	6.1		4.0	6.1	
Lead/Lag	Lag	Lag					Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0					2.0	0.2		2.0	0.2	
Recall Mode	None	None					None	C-Max		None	C-Max	
Walk Time (s)	24.0	24.0										
Flash Dont Walk (s)	1.0	1.0										
Pedestrian Calls (#/hr)	0	0										
Act Effct Green (s)		9.7			23.2	23.2	84.9	78.3		84.1	77.8	
Actuated g/C Ratio		0.08			0.19	0.19	0.71	0.65		0.70	0.65	
v/c Ratio		0.71			0.32	0.41	0.27	0.82		0.42	0.61	
Control Delay		67.4			45.4	21.3	7.5	20.1		23.8	16.4	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		67.4			45.4	21.3	7.5	20.1		23.8	16.4	

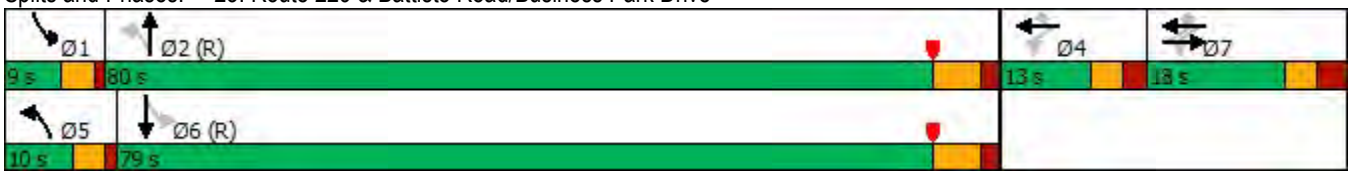
Lane Group	Ø4
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	4
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	12.1
Total Split (s)	13.0
Total Split (%)	11%
Maximum Green (s)	7.9
Yellow Time (s)	3.0
All-Red Time (s)	2.1
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		E			D	C	A	C		C	B	
Approach Delay		67.4			28.2			19.7			16.7	
Approach LOS		E			C			B			B	
Queue Length 50th (ft)		58			41	42	12	514		19	272	
Queue Length 95th (ft)		116			82	103	m15	609		m40	331	
Internal Link Dist (ft)		594			403			760			901	
Turn Bay Length (ft)						175	60			180		
Base Capacity (vph)		170			207	398	250	2296		139	2287	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.58			0.29	0.38	0.26	0.82		0.42	0.61	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 20.3 Intersection LOS: C
Intersection Capacity Utilization 76.1% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Route 229 & Battisto Road/Business Park Drive



Lane Group	Ø4
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	150	84	139	120	110	80	1399	122	190	1112	74
Future Volume (vph)	198	150	84	139	120	110	80	1399	122	190	1112	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	14	12
Storage Length (ft)	125		0	160		0	160		0	235		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			100			250		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.946			0.928			0.988			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1762	0	1770	1729	0	1770	3497	0	1770	3741	0
Flt Permitted	0.438			0.431			0.185			0.068		
Satd. Flow (perm)	816	1762	0	803	1729	0	345	3497	0	127	3741	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			38			11			11	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		744			601			1500			624	
Travel Time (s)		16.9			13.7			25.6			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	215	163	91	151	130	120	87	1521	133	207	1209	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	215	254	0	151	250	0	87	1654	0	207	1289	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4			2			1 2		
Detector Phase	4	4		4	4		2	2		1	1 2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		5.0		
Minimum Split (s)	29.3	29.3		29.3	29.3		23.3	23.3		9.0		
Total Split (s)	38.0	38.0		38.0	38.0		67.0	67.0		15.0		
Total Split (%)	31.7%	31.7%		31.7%	31.7%		55.8%	55.8%		12.5%		
Maximum Green (s)	32.7	32.7		32.7	32.7		58.7	58.7		11.0		
Yellow Time (s)	3.6	3.6		3.6	3.6		4.3	4.3		3.0		
All-Red Time (s)	1.7	1.7		1.7	1.7		4.0	4.0		1.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		
Total Lost Time (s)	5.3	5.3		5.3	5.3		8.3	8.3		4.0		
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		1.0		
Recall Mode	None	None		None	None		C-Max	C-Max		None		
Walk Time (s)	23.0	23.0		23.0	23.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	32.2	32.2		32.2	32.2		58.7	58.7		74.5	78.5	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.49	0.49		0.62	0.65	
v/c Ratio	0.98	0.52		0.70	0.51		0.52	0.96		0.88	0.53	
Control Delay	101.0	38.0		58.5	35.3		25.7	37.1		69.4	9.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	101.0	38.0		58.5	35.3		25.7	37.1		69.4	9.3	
LOS	F	D		E	D		C	D		E	A	
Approach Delay		66.9			44.0			36.5			17.7	
Approach LOS		E			D			D			B	
Queue Length 50th (ft)	165	151		105	138		41	457		124	165	
Queue Length 95th (ft)	#324	236		#204	222		m44	m#774		#256	256	
Internal Link Dist (ft)		664			521			1420			544	
Turn Bay Length (ft)	125			160			160			235		
Base Capacity (vph)	222	496		218	498		168	1716		235	2450	
Starvation Cap Reductn	0	0		0	0		0	0		0	251	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.97	0.51		0.69	0.50		0.52	0.96		0.88	0.59	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 33.8 Intersection LOS: C
Intersection Capacity Utilization 96.2% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Route 229 & Cross Street/Redstone Hill Road

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	180	65	90	1422	1223	45
Future Volume (vph)	180	65	90	1422	1223	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12
Grade (%)	0%			6%	0%	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850			0.995	
Flt Protected	0.950			0.997		
Satd. Flow (prot)	1770	1794	0	3423	3522	0
Flt Permitted	0.950			0.661		
Satd. Flow (perm)	1770	1794	0	2269	3522	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		71			9	
Link Speed (mph)	30			40	40	
Link Distance (ft)	411			1591	1500	
Travel Time (s)	9.3			27.1	25.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	71	98	1546	1329	49
Shared Lane Traffic (%)						
Lane Group Flow (vph)	196	71	0	1644	1378	0
Turn Type	Prot	Prot	Perm	NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases			2		2	
Detector Phase	4	4	2	2	2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	15.0	15.0	15.0	
Minimum Split (s)	20.4	20.4	22.6	22.6	22.6	
Total Split (s)	20.4	20.4	99.6	99.6	99.6	
Total Split (%)	17.0%	17.0%	83.0%	83.0%	83.0%	
Maximum Green (s)	16.0	16.0	92.0	92.0	92.0	
Yellow Time (s)	3.0	3.0	4.4	4.4	4.4	
All-Red Time (s)	1.4	1.4	3.2	3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.4	4.4		7.6	7.6	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	0.2	0.2	0.2	
Recall Mode	None	None	C-Min	C-Min	C-Min	
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	14.9	14.9		93.1	93.1	
Actuated g/C Ratio	0.12	0.12		0.78	0.78	
v/c Ratio	0.89	0.25		0.93	0.50	
Control Delay	89.5	12.9		38.2	6.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	89.5	12.9		38.2	6.2	
LOS	F	B		D	A	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach Delay	69.1			38.2	6.2	
Approach LOS	E			D	A	
Queue Length 50th (ft)	150	0		443	185	
Queue Length 95th (ft)	#277	43		#550	176	
Internal Link Dist (ft)	331			1511	1420	
Turn Bay Length (ft)						
Base Capacity (vph)	236	300		1759	2733	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.83	0.24		0.93	0.50	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 27.3	Intersection LOS: C
Intersection Capacity Utilization 103.5%	ICU Level of Service G
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 27: Route 229 & Enterprise Dr North

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	330	0	85	0	1422	397	55	1278	0
Future Volume (vph)	0	0	0	330	0	85	0	1422	397	55	1278	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			7%			6%	
Storage Length (ft)	0		0	0		300	280		130	165		165
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt						0.850			0.850			
Flt Protected					0.950					0.950		
Satd. Flow (prot)	0	1863	0	0	1770	1583	1798	3415	1528	1717	3433	0
Flt Permitted					0.757					0.067		
Satd. Flow (perm)	0	1863	0	0	1410	1583	1798	3415	1528	121	3433	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						92			198			
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		261			414			713			1591	
Travel Time (s)		5.9			9.4			12.2			27.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	359	0	92	0	1546	432	60	1389	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	359	92	0	1546	432	60	1389	0
Turn Type				Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4		4	2		2	1 2		
Detector Phase	4	4		4	4	4	2	2	2	1	1 2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	15.0	15.0	15.0	5.0		
Minimum Split (s)	30.6	30.6		30.6	30.6	30.6	20.9	20.9	20.9	9.0		
Total Split (s)	40.0	40.0		40.0	40.0	40.0	66.0	66.0	66.0	14.0		
Total Split (%)	33.3%	33.3%		33.3%	33.3%	33.3%	55.0%	55.0%	55.0%	11.7%		
Maximum Green (s)	34.4	34.4		34.4	34.4	34.4	60.1	60.1	60.1	10.0		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.4	4.4	4.4	3.0		
All-Red Time (s)	2.6	2.6		2.6	2.6	2.6	1.5	1.5	1.5	1.0		
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		5.6			5.6	5.6	5.9	5.9	5.9	4.0		
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	0.2	0.2	0.2	1.0		
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None		
Walk Time (s)	24.0	24.0		24.0	24.0	24.0						
Flash Dont Walk (s)	1.0	1.0		1.0	1.0	1.0						
Pedestrian Calls (#/hr)	0	0		0	0	0						
Act Effct Green (s)					32.2	32.2		60.1	60.1	74.2	78.2	
Actuated g/C Ratio					0.27	0.27		0.50	0.50	0.62	0.65	
v/c Ratio					0.95	0.19		0.90	0.50	0.25	0.62	
Control Delay					78.5	7.4		34.2	13.8	19.4	13.7	
Queue Delay					0.0	0.0		6.6	0.0	0.0	0.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					78.5	7.4		40.8	13.8	19.4	13.8	
LOS					E	A		D	B	B	B	
Approach Delay					64.0			34.9			14.1	
Approach LOS					E			C			B	
Queue Length 50th (ft)					266	0		521	153	16	432	
Queue Length 95th (ft)					#443	39		534	169	43	184	
Internal Link Dist (ft)		181			334			633			1511	
Turn Bay Length (ft)						300			130	165		
Base Capacity (vph)					404	519		1710	864	237	2237	
Starvation Cap Reductn					0	0		140	0	0	0	
Spillback Cap Reductn					0	0		0	0	0	116	
Storage Cap Reductn					0	0		0	0	0	0	
Reduced v/c Ratio					0.89	0.18		0.98	0.50	0.25	0.65	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 30.5	Intersection LOS: C
Intersection Capacity Utilization 72.0%	ICU Level of Service C
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 29: Route 229 & Driveway/Ronzo Road

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	43	108	138	1782	1459	63
Future Volume (vph)	43	108	138	1782	1459	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			7%	7%	
Storage Length (ft)	0	0	745			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.994	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1708	3415	3395	0
Flt Permitted	0.950		0.098			
Satd. Flow (perm)	1770	1583	176	3415	3395	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		31			6	
Link Speed (mph)	30			40	40	
Link Distance (ft)	703			1424	713	
Travel Time (s)	16.0			24.3	12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	117	150	1937	1586	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	117	150	1937	1654	0
Turn Type	Prot	pt+ov	pm+pt	NA	NA	
Protected Phases	8	8 5	5	2	6	
Permitted Phases			2			
Detector Phase	8	8 5	5	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	24.0		9.0	21.7	21.7	
Total Split (s)	24.0		17.0	96.0	79.0	
Total Split (%)	20.0%		14.2%	80.0%	65.8%	
Maximum Green (s)	20.0		13.0	89.3	72.3	
Yellow Time (s)	3.0		3.0	4.4	4.4	
All-Red Time (s)	1.0		1.0	2.3	2.3	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0		4.0	6.7	6.7	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	C-Min	C-Min	
Walk Time (s)	19.0					
Flash Dont Walk (s)	1.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	10.5	24.3	101.5	98.8	85.0	
Actuated g/C Ratio	0.09	0.20	0.85	0.82	0.71	
v/c Ratio	0.31	0.34	0.55	0.69	0.69	
Control Delay	55.0	30.5	17.9	11.2	12.4	
Queue Delay	0.0	0.0	0.0	0.1	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Delay	55.0	30.5	17.9	11.3	12.4	
LOS	D	C	B	B	B	
Approach Delay	37.5			11.8	12.4	
Approach LOS	D			B	B	
Queue Length 50th (ft)	35	57	49	495	334	
Queue Length 95th (ft)	71	100	m77	323	675	
Internal Link Dist (ft)	623			1344	633	
Turn Bay Length (ft)			745			
Base Capacity (vph)	295	393	321	2811	2405	
Starvation Cap Reductn	0	0	0	0	38	
Spillback Cap Reductn	0	0	0	76	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.16	0.30	0.47	0.71	0.70	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 13.1	Intersection LOS: B
Intersection Capacity Utilization 66.4%	ICU Level of Service C
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 30: Route 229 & Enterprise Dr. South

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	90	130	1784	35	25	1602
Future Volume (vph)	90	130	1784	35	25	1602
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			7%
Storage Length (ft)	0	0		105	95	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3539	1583	1708	3415
Flt Permitted	0.950				0.054	
Satd. Flow (perm)	1770	1583	3539	1583	97	3415
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		141		15		
Link Speed (mph)	30		40			40
Link Distance (ft)	370		539			1424
Travel Time (s)	8.4		9.2			24.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	141	1939	38	27	1741
Shared Lane Traffic (%)						
Lane Group Flow (vph)	98	141	1939	38	27	1741
Turn Type	Prot	Prot	NA	Prot	pm+pt	NA
Protected Phases	4	4	2	2	1	1 2
Permitted Phases					1 2	
Detector Phase	4	4	2	2	1	1 2
Switch Phase						
Minimum Initial (s)	5.0	5.0	14.0	14.0	4.0	
Minimum Split (s)	22.1	22.1	20.8	20.8	8.0	
Total Split (s)	22.1	22.1	79.9	79.9	18.0	
Total Split (%)	18.4%	18.4%	66.6%	66.6%	15.0%	
Maximum Green (s)	18.0	18.0	73.1	73.1	14.0	
Yellow Time (s)	3.0	3.0	4.4	4.4	3.0	
All-Red Time (s)	1.1	1.1	2.4	2.4	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.1	4.1	6.8	6.8	4.0	
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	5.0	5.0	2.0	
Recall Mode	None	None	C-Min	C-Min	None	
Walk Time (s)	17.0	17.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	11.0	11.0	74.4	74.4	96.9	100.9
Actuated g/C Ratio	0.09	0.09	0.62	0.62	0.81	0.84
v/c Ratio	0.60	0.52	0.88	0.04	0.08	0.61
Control Delay	67.3	14.9	17.2	4.9	2.8	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	67.3	14.9	17.2	4.9	2.8	2.5
LOS	E	B	B	A	A	A
Approach Delay	36.4		16.9			2.5
Approach LOS	D		B			A
Queue Length 50th (ft)	74	0	288	3	1	38
Queue Length 95th (ft)	127	59	234	m6	m6	204
Internal Link Dist (ft)	290		459			1344
Turn Bay Length (ft)				105	95	
Base Capacity (vph)	265	357	2194	987	342	2871
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.39	0.88	0.04	0.08	0.61

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 11.7	Intersection LOS: B
Intersection Capacity Utilization 66.4%	ICU Level of Service C
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

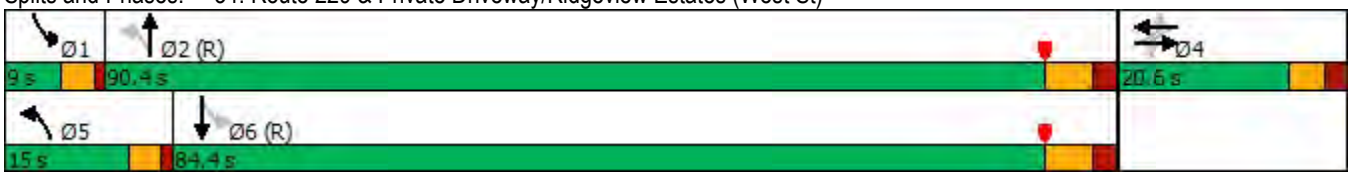
Splits and Phases: 31: Route 229 & ESPN Drive

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	0	59	20	0	5	96	1744	25	30	1573	91
Future Volume (vph)	74	0	59	20	0	5	96	1744	25	30	1573	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		50	0		120	120		0	150		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	25			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.850			0.850			0.998			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1583	0	1770	3532	0	1770	3511	0
Flt Permitted	0.754			0.715			0.077			0.075		
Satd. Flow (perm)	1405	1583	0	1332	1583	0	143	3532	0	140	3511	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		118			105			3			10	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		299			498			1447			922	
Travel Time (s)		6.8			11.3			24.7			15.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	80	0	64	22	0	5	104	1896	27	33	1710	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	64	0	22	5	0	104	1923	0	33	1809	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4			2			6		
Detector Phase	4	4		4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	13.4	13.4		13.4	13.4		9.0	21.6		9.0	21.6	
Total Split (s)	20.6	20.6		20.6	20.6		15.0	90.4		9.0	84.4	
Total Split (%)	17.2%	17.2%		17.2%	17.2%		12.5%	75.3%		7.5%	70.3%	
Maximum Green (s)	15.2	15.2		15.2	15.2		11.0	83.8		5.0	77.8	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.1	2.1		2.1	2.1		1.0	2.2		1.0	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	5.4		5.4	5.4		4.0	6.6		4.0	6.6	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	0.2		1.5	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	11.1	11.1		11.1	11.1		98.6	91.5		93.8	86.2	
Actuated g/C Ratio	0.09	0.09		0.09	0.09		0.82	0.76		0.78	0.72	
v/c Ratio	0.62	0.25		0.18	0.02		0.50	0.71		0.19	0.72	
Control Delay	72.3	2.7		52.1	0.2		13.7	10.5		5.5	14.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	72.3	2.7		52.1	0.2		13.7	10.5		5.5	14.5	
LOS	E	A		D	A		B	B		A	B	
Approach Delay		41.4			42.5			10.7			14.3	
Approach LOS		D			D			B			B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	61	0		16	0		11	396		6	321	
Queue Length 95th (ft)	111	3		42	0		47	562		m11	415	
Internal Link Dist (ft)		219			418			1367			842	
Turn Bay Length (ft)	50						120			150		
Base Capacity (vph)	177	303		168	292		267	2695		177	2524	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.45	0.21		0.13	0.02		0.39	0.71		0.19	0.72	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 13.7	Intersection LOS: B
Intersection Capacity Utilization 77.3%	ICU Level of Service D
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 34: Route 229 & Private Driveway/Ridgeview Estates (West St)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	10	127	337	130	418	70	1255	401	462	1147	25
Future Volume (vph)	190	10	127	337	130	418	70	1255	401	462	1147	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	250		0	175		0	175		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.861			0.886			0.964			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1604	0	1770	1650	0	1770	3412	0	1770	3529	0
Flt Permitted	0.193			0.405			0.150			0.065		
Satd. Flow (perm)	360	1604	0	754	1650	0	279	3412	0	121	3529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		136			101			33			2	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		906			1161			1141			1447	
Travel Time (s)		20.6			26.4			19.4			24.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	11	138	366	141	454	76	1364	436	502	1247	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	207	149	0	366	595	0	76	1800	0	502	1274	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8			6			2		
Detector Phase	7	4		3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	9.5	25.4		9.5	25.4		9.0	22.1		9.0	22.1	
Total Split (s)	14.0	26.8		29.2	42.0		11.0	65.0		29.0	83.0	
Total Split (%)	9.3%	17.9%		19.5%	28.0%		7.3%	43.3%		19.3%	55.3%	
Maximum Green (s)	9.5	20.4		24.7	35.6		7.0	57.9		25.0	75.9	
Yellow Time (s)	3.5	4.2		3.5	4.2		3.0	4.4		3.0	4.4	
All-Red Time (s)	1.0	2.2		1.0	2.2		1.0	2.7		1.0	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	6.4		4.5	6.4		4.0	7.1		4.0	7.1	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	0.2		2.0	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		18.0			18.0							
Flash Dont Walk (s)		1.0			1.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	32.1	20.7		51.5	35.6		67.5	57.9		90.0	76.4	
Actuated g/C Ratio	0.21	0.14		0.34	0.24		0.45	0.39		0.60	0.51	
v/c Ratio	1.25	0.44		0.86	1.27		0.40	1.35		1.45	0.71	
Control Delay	187.5	15.7		62.3	175.8		21.4	197.1		251.7	31.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	187.5	15.7		62.3	175.8		21.4	197.1		251.7	31.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	B		E	F		C	F		F	C	
Approach Delay		115.6			132.6			190.0			93.4	
Approach LOS		F			F			F			F	
Queue Length 50th (ft)	~196	11		297	~655		30	~1203		~616	495	
Queue Length 95th (ft)	#364	79		#465	#898		53	#1342		#848	581	
Internal Link Dist (ft)		826			1081			1061			1367	
Turn Bay Length (ft)	150			250			175			175		
Base Capacity (vph)	166	338		426	468		196	1337		347	1798	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.25	0.44		0.86	1.27		0.39	1.35		1.45	0.71	

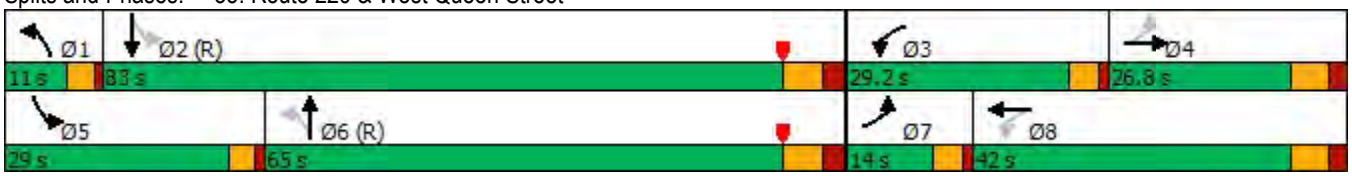
Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.45
Intersection Signal Delay: 139.0 Intersection LOS: F
Intersection Capacity Utilization 134.5% ICU Level of Service H
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 35: Route 229 & West Queen Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	66	110	1696	1500	120
Future Volume (vph)	35	66	110	1696	1500	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	250	100			250
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.91	0.91	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1610	3390	3539	1583
Flt Permitted	0.950		0.070	0.955		
Satd. Flow (perm)	1770	1583	119	3238	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		72				97
Link Speed (mph)	30			40	40	
Link Distance (ft)	746			2348	1141	
Travel Time (s)	17.0			40.0	19.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	72	120	1843	1630	130
Shared Lane Traffic (%)			10%			
Lane Group Flow (vph)	38	72	108	1855	1630	130
Turn Type	Prot	Perm	D.P+P	NA	NA	Perm
Protected Phases	4		1	1 2	2	
Permitted Phases		4	2			2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		15.0	15.0
Minimum Split (s)	30.0	30.0	8.0		24.8	24.8
Total Split (s)	30.0	30.0	25.0		65.0	65.0
Total Split (%)	25.0%	25.0%	20.8%		54.2%	54.2%
Maximum Green (s)	26.0	26.0	21.0		58.2	58.2
Yellow Time (s)	3.0	3.0	3.0		4.4	4.4
All-Red Time (s)	1.0	1.0	1.0		2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		6.8	6.8
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		C-Max	C-Max
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	8.4	8.4	101.8	101.8	58.2	58.2
Actuated g/C Ratio	0.07	0.07	0.85	0.85	0.48	0.48
v/c Ratio	0.31	0.41	0.18	0.66	0.95	0.16
Control Delay	59.1	18.9	22.7	5.8	42.7	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.1	18.9	22.7	5.8	42.7	5.9

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
LOS	E	B	C	A	D	A
Approach Delay	32.7			6.8	40.0	
Approach LOS	C			A	D	
Queue Length 50th (ft)	29	0	41	81	616	13
Queue Length 95th (ft)	64	45	m47	m118	#794	47
Internal Link Dist (ft)	666			2268	1061	
Turn Bay Length (ft)		250	100			250
Base Capacity (vph)	383	399	607	2798	1716	817
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.18	0.18	0.66	0.95	0.16

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 22.8 Intersection LOS: C
Intersection Capacity Utilization 98.9% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 36: Route 229 & Welch Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	10	40	45	0	85	40	1721	117	212	1359	20
Future Volume (vph)	5	10	40	45	0	85	40	1721	117	212	1359	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			7%			0%	
Storage Length (ft)	250		0	0		95	205		0	205		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			100			25			180		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.881			0.850			0.990			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1641	0	1770	1583	0	1708	3381	0	1770	3532	0
Flt Permitted	0.608			0.722			0.174			0.054		
Satd. Flow (perm)	1133	1641	0	1345	1583	0	313	3381	0	101	3532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43			191			10			4	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		1101			991			3268			2348	
Travel Time (s)		25.0			22.5			55.7			40.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	11	43	49	0	92	43	1871	127	230	1477	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	54	0	49	92	0	43	1998	0	230	1499	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	1 2	
Permitted Phases	4			8			2			1 2		
Detector Phase	4	4		8	8		2	2		1	1 2	
Switch Phase												
Minimum Initial (s)	9.0	9.0		5.0	5.0		25.0	25.0		5.0		
Minimum Split (s)	20.0	20.0		22.5	22.5		32.6	32.6		9.0		
Total Split (s)	22.6	22.6		22.6	22.6		79.4	79.4		18.0		
Total Split (%)	18.8%	18.8%		18.8%	18.8%		66.2%	66.2%		15.0%		
Maximum Green (s)	18.6	18.6		18.1	18.1		71.8	71.8		14.0		
Yellow Time (s)	3.0	3.0		3.5	3.5		4.9	4.9		3.0		
All-Red Time (s)	1.0	1.0		1.0	1.0		2.7	2.7		1.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		
Total Lost Time (s)	4.0	4.0		4.5	4.5		7.6	7.6		4.0		
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.0	4.0		2.0		
Recall Mode	None	None		None	None		C-Min	C-Min		Min		
Walk Time (s)	15.0	15.0		7.0	7.0							
Flash Dont Walk (s)	1.0	1.0		11.0	11.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	10.9	10.9		10.4	10.4		73.7	73.7		97.1	101.1	
Actuated g/C Ratio	0.09	0.09		0.09	0.09		0.61	0.61		0.81	0.84	
v/c Ratio	0.05	0.29		0.42	0.29		0.22	0.96		0.64	0.50	
Control Delay	49.0	23.0		62.3	2.4		14.2	27.8		29.8	8.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

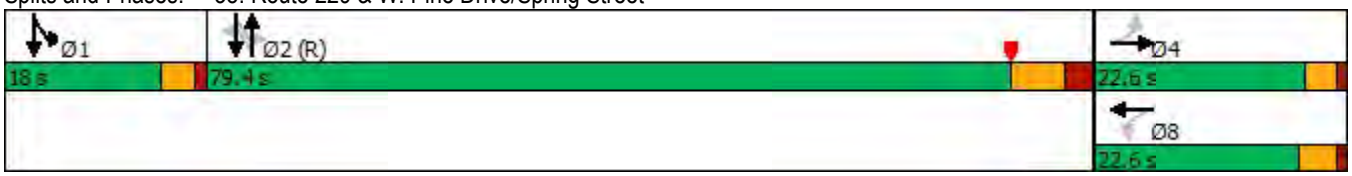
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	49.0	23.0		62.3	2.4		14.2	27.8		29.8	8.7	
LOS	D	C		E	A		B	C		C	A	
Approach Delay		25.2			23.2			27.6			11.5	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	4	8		37	0		12	478		62	437	
Queue Length 95th (ft)	16	47		76	0		m23	#965		m99	m670	
Internal Link Dist (ft)		1021			911			3188			2268	
Turn Bay Length (ft)	250						205			205		
Base Capacity (vph)	175	290		202	400		192	2078		357	2975	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.03	0.19		0.24	0.23		0.22	0.96		0.64	0.50	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 89.8 (75%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 20.4	Intersection LOS: C
Intersection Capacity Utilization 85.6%	ICU Level of Service E
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 38: Route 229 & W. Pine Drive/Spring Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	10	23	186	0	195	12	1643	180	21	1170	0
Future Volume (vph)	4	10	23	186	0	195	12	1643	180	21	1170	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	14	12	14	12	12	12	12	12	12
Grade (%)		0%			0%			0%			7%	
Storage Length (ft)	250		0	250		0	0		0	250		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.896			0.850			0.985				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1669	0	1888	1583	0	1770	3486	0	1708	3415	0
Flt Permitted	0.319			0.734			0.192			0.067		
Satd. Flow (perm)	594	1669	0	1458	1583	0	358	3486	0	120	3415	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			46			28				
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		2534			992			424			3268	
Travel Time (s)		57.6			22.5			7.2			55.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	11	25	202	0	212	13	1786	196	23	1272	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	36	0	202	212	0	13	1982	0	23	1272	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			2	
Permitted Phases	4			8			2			2		
Detector Phase	4	4		8	8		2	2		2	2	
Switch Phase												
Minimum Initial (s)	9.0	9.0		5.0	5.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	23.0	23.0		22.5	22.5		21.3	21.3		21.3	21.3	
Total Split (s)	23.0	23.0		23.0	23.0		97.0	97.0		97.0	97.0	
Total Split (%)	19.2%	19.2%		19.2%	19.2%		80.8%	80.8%		80.8%	80.8%	
Maximum Green (s)	19.0	19.0		18.5	18.5		90.7	90.7		90.7	90.7	
Yellow Time (s)	3.0	3.0		3.5	3.5		4.6	4.6		4.6	4.6	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.5	4.5		6.3	6.3		6.3	6.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5		3.0	3.0		2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)	18.0	18.0		7.0	7.0							
Flash Dont Walk (s)	1.0	1.0		11.0	11.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	18.6	18.6		18.1	18.1		91.1	91.1		91.1	91.1	
Actuated g/C Ratio	0.16	0.16		0.15	0.15		0.76	0.76		0.76	0.76	
v/c Ratio	0.04	0.13		0.92	0.77		0.05	0.75		0.26	0.49	
Control Delay	44.5	22.5		93.7	56.6		2.8	5.6		12.6	7.1	

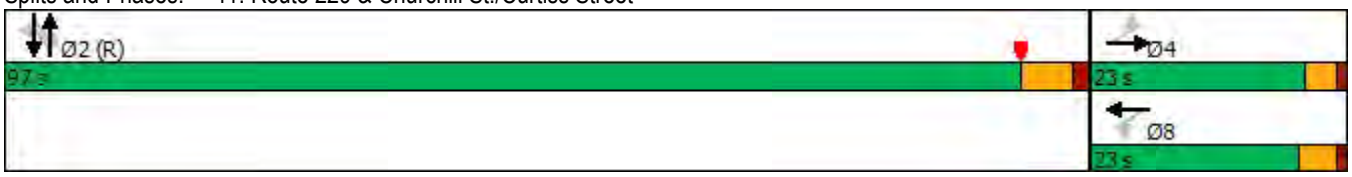
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	44.5	22.5		93.7	56.6		2.8	5.6		12.6	7.1	
LOS	D	C		F	E		A	A		B	A	
Approach Delay		24.7			74.7			5.6			7.2	
Approach LOS		C			E			A			A	
Queue Length 50th (ft)	3	7		156	125		1	63		3	72	
Queue Length 95th (ft)	14	38		#298	#238		m2	132		m13	205	
Internal Link Dist (ft)		2454			912			344			3188	
Turn Bay Length (ft)	250			250						250		
Base Capacity (vph)	94	285		224	282		271	2651		90	2591	
Starvation Cap Reductn	0	0		0	0		0	1		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	72	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.13		0.90	0.75		0.05	0.75		0.26	0.50	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 90.7 (76%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 14.0 Intersection LOS: B
Intersection Capacity Utilization 77.1% ICU Level of Service D
Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 41: Route 229 & Churchill St./Curtiss Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	5	51	25	0	23	82	1749	20	19	1274	86
Future Volume (vph)	63	5	51	25	0	23	82	1749	20	19	1274	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	65		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.942			0.935			0.998			0.991	
Flt Protected		0.974			0.975		0.950			0.950		
Satd. Flow (prot)	0	1709	0	0	1698	0	1770	3532	0	1770	3507	0
Flt Permitted		0.834			0.760		0.156			0.084		
Satd. Flow (perm)	0	1463	0	0	1324	0	291	3532	0	156	3507	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			31			2			15	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		287			281			412			424	
Travel Time (s)		6.5			6.4			7.0			7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	5	55	27	0	25	89	1901	22	21	1385	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	128	0	0	52	0	89	1923	0	21	1478	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	17.5	17.5		17.5	17.5		21.4	21.4		21.4	21.4	
Total Split (s)	26.0	26.0		26.0	26.0		94.0	94.0		94.0	94.0	
Total Split (%)	21.7%	21.7%		21.7%	21.7%		78.3%	78.3%		78.3%	78.3%	
Maximum Green (s)	21.5	21.5		21.5	21.5		87.6	87.6		87.6	87.6	
Yellow Time (s)	3.4	3.4		3.4	3.4		4.9	4.9		4.9	4.9	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		6.4	6.4		6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Recall Mode	C-Min	C-Min		C-Min	C-Min		Max	Max		Max	Max	
Walk Time (s)	12.0	12.0		12.0	12.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		12.9			12.9		96.2	96.2		96.2	96.2	
Actuated g/C Ratio		0.11			0.11		0.80	0.80		0.80	0.80	
v/c Ratio		0.71			0.31		0.38	0.68		0.17	0.53	
Control Delay		59.9			28.6		13.6	12.3		6.6	5.5	
Queue Delay		0.0			0.0		0.0	0.4		0.0	0.0	
Total Delay		59.9			28.6		13.6	12.7		6.6	5.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		E			C		B	B		A	A	
Approach Delay		59.9			28.6			12.8			5.6	
Approach LOS		E			C			B			A	
Queue Length 50th (ft)		76			15		31	432		3	150	
Queue Length 95th (ft)		136			52		m79	612		m8	334	
Internal Link Dist (ft)		207			201			332			344	
Turn Bay Length (ft)							100			65		
Base Capacity (vph)		285			262		233	2832		124	2815	
Starvation Cap Reductn		0			0		0	380		0	110	
Spillback Cap Reductn		1			1		0	109		0	138	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.45			0.20		0.38	0.78		0.17	0.55	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 4:EBWB, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 11.7 Intersection LOS: B
Intersection Capacity Utilization 84.5% ICU Level of Service E
Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 42: Route 229 & Corporate Drive/Centrion Plaza Drive

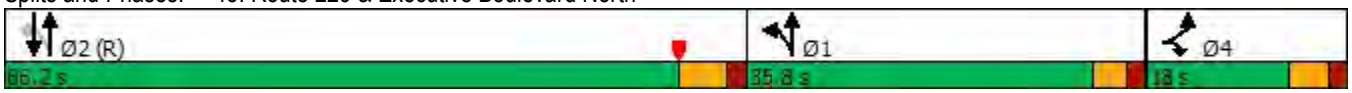
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	87	97	34	1764	1311	39
Future Volume (vph)	87	97	34	1764	1311	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	360	220			100
Storage Lanes	1	1	1			1
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.117			
Satd. Flow (perm)	1770	1583	218	3539	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		105				17
Link Speed (mph)	30			40	40	
Link Distance (ft)	694			570	291	
Travel Time (s)	15.8			9.7	5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	105	37	1917	1425	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	95	105	37	1917	1425	42
Turn Type	Prot	Prot	pm+pt	NA	NA	Perm
Protected Phases	4	4	1	1 2	2	
Permitted Phases			1 2			2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		15.0	15.0
Minimum Split (s)	12.4	12.4	8.9		21.0	21.0
Total Split (s)	18.0	18.0	35.8		66.2	66.2
Total Split (%)	15.0%	15.0%	29.8%		55.2%	55.2%
Maximum Green (s)	12.6	12.6	30.9		60.2	60.2
Yellow Time (s)	3.6	3.6	3.0		4.3	4.3
All-Red Time (s)	1.8	1.8	1.9		1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.4	5.4	4.9		6.0	6.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	2.5	2.5	2.0		0.2	0.2
Recall Mode	None	None	None		C-Max	C-Max
Walk Time (s)	24.0	24.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	11.3	11.3	93.5	98.4	73.2	73.2
Actuated g/C Ratio	0.09	0.09	0.78	0.82	0.61	0.61
v/c Ratio	0.57	0.43	0.09	0.66	0.66	0.04
Control Delay	64.8	14.7	3.0	4.5	19.3	10.2
Queue Delay	0.5	0.0	0.0	0.1	0.8	0.0
Total Delay	65.3	14.7	3.0	4.6	20.0	10.2

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
LOS	E	B	A	A	C	B
Approach Delay	38.8			4.6	19.7	
Approach LOS	D			A	B	
Queue Length 50th (ft)	72	0	1	236	239	7
Queue Length 95th (ft)	124	52	m8	306	662	m25
Internal Link Dist (ft)	614			490	211	
Turn Bay Length (ft)		360	220			100
Base Capacity (vph)	196	269	590	3246	2158	972
Starvation Cap Reductn	0	0	0	387	387	0
Spillback Cap Reductn	12	3	0	101	116	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.39	0.06	0.67	0.80	0.04

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 12.6 Intersection LOS: B
Intersection Capacity Utilization 63.2% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 43: Route 229 & Executive Boulevard North

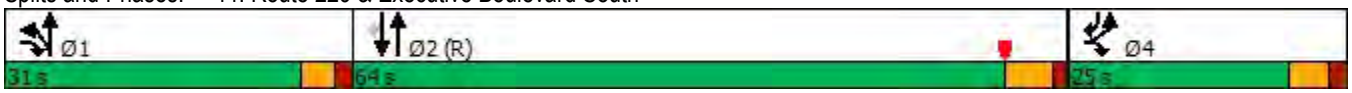


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	177	530	240	1621	1277	136
Future Volume (vph)	177	530	240	1621	1277	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			5%	0%	
Storage Length (ft)	860	370	335			250
Storage Lanes	1	1	2			1
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	0.88	0.97	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	2787	3347	3451	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	2787	3347	3451	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		39				148
Link Speed (mph)	30			40	40	
Link Distance (ft)	945			579	570	
Travel Time (s)	21.5			9.9	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	192	576	261	1762	1388	148
Shared Lane Traffic (%)						
Lane Group Flow (vph)	192	576	261	1762	1388	148
Turn Type	Prot	pt+ov	Prot	NA	NA	pm+ov
Protected Phases	4	1 4	1	1 2	2	4
Permitted Phases		1 4				2
Detector Phase	4	1 4	1	1 2	2	4
Switch Phase						
Minimum Initial (s)	7.0		4.0		15.0	7.0
Minimum Split (s)	12.4		8.6		20.8	12.4
Total Split (s)	25.0		31.0		64.0	25.0
Total Split (%)	20.8%		25.8%		53.3%	20.8%
Maximum Green (s)	19.6		26.4		58.2	19.6
Yellow Time (s)	3.6		3.0		4.3	3.6
All-Red Time (s)	1.8		1.6		1.5	1.8
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.4		4.6		5.8	5.4
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.5		2.0		0.2	2.5
Recall Mode	None		None		C-Max	None
Walk Time (s)	22.0					22.0
Flash Dont Walk (s)	1.0					1.0
Pedestrian Calls (#/hr)	0					0
Act Effct Green (s)	18.7	51.4	27.3	91.3	58.2	82.7
Actuated g/C Ratio	0.16	0.43	0.23	0.76	0.48	0.69
v/c Ratio	0.70	0.47	0.34	0.67	0.81	0.13
Control Delay	62.0	24.4	47.5	4.5	12.5	0.4
Queue Delay	0.0	0.0	0.0	0.1	1.0	0.0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Delay	62.0	24.4	47.5	4.6	13.4	0.4
LOS	E	C	D	A	B	A
Approach Delay	33.8			10.1	12.2	
Approach LOS	C			B	B	
Queue Length 50th (ft)	141	165	94	160	500	0
Queue Length 95th (ft)	223	222	m122	m174	86	m0
Internal Link Dist (ft)	865			499	490	
Turn Bay Length (ft)	860	370	335			250
Base Capacity (vph)	289	1195	762	2626	1716	1147
Starvation Cap Reductn	0	0	0	141	43	0
Spillback Cap Reductn	0	1	0	38	129	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.48	0.34	0.71	0.87	0.13

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 15.1	Intersection LOS: B
Intersection Capacity Utilization 65.1%	ICU Level of Service C
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 44: Route 229 & Executive Boulevard South



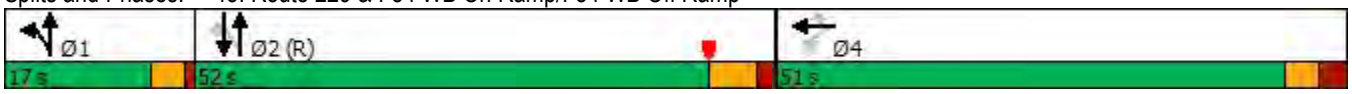
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	475	0	569	75	1294	0	0	865	940
Future Volume (vph)	0	0	0	475	0	569	75	1294	0	0	865	940
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			5%	
Storage Length (ft)	0		0	240		440	90		0	0		250
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			100			100			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950	0.950		0.950					
Satd. Flow (prot)	0	0	0	1681	1681	1583	1770	3539	0	0	3451	1544
Flt Permitted				0.950	0.950		0.159					
Satd. Flow (perm)	0	0	0	1681	1681	1583	296	3539	0	0	3451	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						65						981
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		337			747			508			579	
Travel Time (s)		7.7			17.0			8.7			9.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	516	0	618	82	1407	0	0	940	1022
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	0	0	258	258	618	82	1407	0	0	940	1022
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					4		1	1 2			2	
Permitted Phases				4		4	1 2					2
Detector Phase				4	4	4	1	1 2			2	2
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0	5.0				15.0	15.0
Minimum Split (s)				12.7	12.7	12.7	9.0				21.2	21.2
Total Split (s)				51.0	51.0	51.0	17.0				52.0	52.0
Total Split (%)				42.5%	42.5%	42.5%	14.2%				43.3%	43.3%
Maximum Green (s)				45.3	45.3	45.3	13.0				45.8	45.8
Yellow Time (s)				3.0	3.0	3.0	3.0				4.3	4.3
All-Red Time (s)				2.7	2.7	2.7	1.0				1.9	1.9
Lost Time Adjust (s)				0.0	0.0	0.0	0.0				0.0	0.0
Total Lost Time (s)				5.7	5.7	5.7	4.0				6.2	6.2
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)				2.0	2.0	2.0	2.0				0.2	0.2
Recall Mode				None	None	None	None				C-Max	C-Max
Act Effct Green (s)				44.7	44.7	44.7	61.6	65.6			45.8	45.8
Actuated g/C Ratio				0.37	0.37	0.37	0.51	0.55			0.38	0.38
v/c Ratio				0.41	0.41	0.98	0.26	0.73			0.71	0.86
Control Delay				30.2	30.2	65.0	15.4	23.4			22.4	12.6
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.4	2.3
Total Delay				30.2	30.2	65.0	15.4	23.4			22.8	14.9
LOS				C	C	E	B	C			C	B
Approach Delay					49.1			23.0			18.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS					D			C			B	
Queue Length 50th (ft)				152	152	429	29	418			209	586
Queue Length 95th (ft)				232	232	#677	55	506			334	685
Internal Link Dist (ft)		257			667			428			499	
Turn Bay Length (ft)				240		440	90					250
Base Capacity (vph)				634	634	638	318	1933			1317	1195
Starvation Cap Reductn				0	0	0	0	0			89	83
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.41	0.41	0.97	0.26	0.73			0.77	0.92

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 27.6 Intersection LOS: C
Intersection Capacity Utilization 88.8% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 45: Route 229 & I-84 WB On Ramp/I-84 WB Off Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	825	20	200	400	5	175	0	320	5	10	0
Future Volume (vph)	5	825	20	200	400	5	175	0	320	5	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		150	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.996			0.999				0.850			
Flt Protected					0.984		0.950	0.950			0.985	
Satd. Flow (prot)	0	3525	0	0	3479	0	1681	1681	1583	0	1835	0
Flt Permitted		0.951			0.545		0.950	0.950			0.985	
Satd. Flow (perm)	0	3352	0	0	1927	0	1681	1681	1583	0	1835	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			1				151			
Link Speed (mph)		35			35			35			30	
Link Distance (ft)		363			299			709			169	
Travel Time (s)		7.1			5.8			13.8			3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	897	22	217	435	5	190	0	348	5	11	0
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	924	0	0	657	0	95	95	348	0	16	0
Turn Type	Perm	NA		D.P+P	NA		Split	NA	pm+ov	Split	NA	
Protected Phases		2		1	1 2		5	5	1	4	4	
Permitted Phases	2			2					5			
Detector Phase	2	2		1	1 2		5	5	1	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		7.0			9.0	9.0	7.0	5.0	5.0	
Minimum Split (s)	22.4	22.4		11.0			13.0	13.0	11.0	24.3	24.3	
Total Split (s)	41.0	41.0		10.0			19.0	19.0	10.0	10.0	10.0	
Total Split (%)	51.3%	51.3%		12.5%			23.8%	23.8%	12.5%	12.5%	12.5%	
Maximum Green (s)	33.6	33.6		6.0			15.0	15.0	6.0	3.7	3.7	
Yellow Time (s)	4.4	4.4		3.0			3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		1.0			1.0	1.0	1.0	3.3	3.3	
Lost Time Adjust (s)		0.0					0.0	0.0	0.0		0.0	
Total Lost Time (s)		7.4					4.0	4.0	4.0		6.3	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2		0.2			3.0	3.0	0.2	1.5	1.5	
Recall Mode	C-Max	C-Max		Min			Min	Min	Min	None	None	
Walk Time (s)										17.0	17.0	
Flash Dont Walk (s)										1.0	1.0	
Pedestrian Calls (#/hr)										0	0	
Act Effct Green (s)		44.8			55.2		10.6	10.6	20.8		5.0	
Actuated g/C Ratio		0.56			0.69		0.13	0.13	0.26		0.06	
v/c Ratio		0.49			0.45		0.43	0.43	0.67		0.14	
Control Delay		12.9			6.0		37.6	37.6	19.6		38.3	
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0	
Total Delay		12.9			6.0		37.6	37.6	19.6		38.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		B			A		D	D	B		D	
Approach Delay		12.9			6.0			26.0			38.3	
Approach LOS		B			A			C			D	
Queue Length 50th (ft)		121			34		47	47	85		8	
Queue Length 95th (ft)		252			110		90	90	129		27	
Internal Link Dist (ft)		283			219			629			89	
Turn Bay Length (ft)							150		150			
Base Capacity (vph)		1877			1464		315	315	522		115	
Starvation Cap Reductn		0			0		0	0	0		0	
Spillback Cap Reductn		0			0		0	0	0		0	
Storage Cap Reductn		0			0		0	0	0		0	
Reduced v/c Ratio		0.49			0.45		0.30	0.30	0.67		0.14	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 73 (91%), Referenced to phase 2:EBWB, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 14.3 Intersection LOS: B
Intersection Capacity Utilization 65.0% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: Route 229/Driveway & Route 6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	55	60	55	25	20	0	440	95	45	450	20
Future Volume (vph)	15	55	60	55	25	20	0	440	95	45	450	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.938			0.973			0.976			0.995	
Flt Protected		0.994			0.973						0.996	
Satd. Flow (prot)	0	1737	0	0	1764	0	0	1818	0	0	1846	0
Flt Permitted		0.960			0.698						0.922	
Satd. Flow (perm)	0	1677	0	0	1265	0	0	1818	0	0	1709	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		62			18			16			3	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		859			830			899			709	
Travel Time (s)		19.5			18.9			17.5			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	60	65	60	27	22	0	478	103	49	489	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	141	0	0	109	0	0	581	0	0	560	0
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	9.0	9.0		9.0	9.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	13.4	13.4		13.4	13.4		25.3	25.3		25.3	25.3	
Total Split (s)	24.4	24.4		24.4	24.4		25.6	25.6		25.6	25.6	
Total Split (%)	34.9%	34.9%		34.9%	34.9%		36.6%	36.6%		36.6%	36.6%	
Maximum Green (s)	20.0	20.0		20.0	20.0		20.3	20.3		20.3	20.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.8	3.8		3.8	3.8	
All-Red Time (s)	1.4	1.4		1.4	1.4		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.4			4.4			5.3			5.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		10.8			10.8			49.5			49.5	
Actuated g/C Ratio		0.15			0.15			0.71			0.71	
v/c Ratio		0.45			0.52			0.45			0.46	
Control Delay		20.4			31.6			9.0			6.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		20.4			31.6			9.0			6.3	
LOS		C			C			A			A	
Approach Delay		20.4			31.6			9.0			6.3	
Approach LOS		C			C			A			A	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	29%
Maximum Green (s)	16.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	9.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		31			37			118			78	
Queue Length 95th (ft)		75			78			283			169	
Internal Link Dist (ft)		779			750			819			629	
Turn Bay Length (ft)												
Base Capacity (vph)		523			374			1290			1209	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.27			0.29			0.45			0.46	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 45.7 (65%), Referenced to phase 2:NBSB and 6:, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 10.9	Intersection LOS: B
Intersection Capacity Utilization 81.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Route 229 & Moody St/Louisianna Ave

Lane Group	Ø3
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

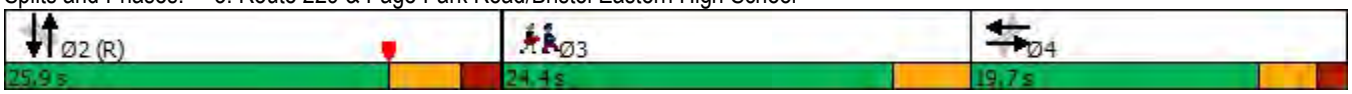
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	0	20	60	0	15	10	515	35	20	550	5
Future Volume (vph)	10	0	20	60	0	15	10	515	35	20	550	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.910			0.973			0.992			0.999	
Flt Protected		0.984			0.961			0.999			0.998	
Satd. Flow (prot)	0	1668	0	0	1742	0	0	1846	0	0	1857	0
Flt Permitted		0.896			0.746			0.989			0.973	
Satd. Flow (perm)	0	1519	0	0	1352	0	0	1828	0	0	1811	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		108			108			5			1	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		480			517			662			899	
Travel Time (s)		10.9			11.8			12.9			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	0	22	65	0	16	11	560	38	22	598	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	81	0	0	609	0	0	625	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	14.7	14.7		14.7	14.7		25.9	25.9		25.9	25.9	
Total Split (s)	19.7	19.7		19.7	19.7		25.9	25.9		25.9	25.9	
Total Split (%)	28.1%	28.1%		28.1%	28.1%		37.0%	37.0%		37.0%	37.0%	
Maximum Green (s)	15.0	15.0		15.0	15.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.8	3.8		3.8	3.8	
All-Red Time (s)	1.7	1.7		1.7	1.7		2.1	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.7			4.7			5.9			5.9	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		10.0			10.0			53.5			53.5	
Actuated g/C Ratio		0.14			0.14			0.76			0.76	
v/c Ratio		0.11			0.28			0.44			0.45	
Control Delay		0.7			6.6			4.6			5.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		0.7			6.6			4.6			5.9	
LOS		A			A			A			A	
Approach Delay		0.7			6.6			4.6			5.9	
Approach LOS		A			A			A			A	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	22.0
Total Split (s)	24.4
Total Split (%)	35%
Maximum Green (s)	20.4
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		0			0			92			139	
Queue Length 95th (ft)		0			24			78			195	
Internal Link Dist (ft)		400			437			582			819	
Turn Bay Length (ft)												
Base Capacity (vph)		410			374			1398			1385	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.08			0.22			0.44			0.45	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 1 (1%), Referenced to phase 2:NBSB and 6:, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.45	
Intersection Signal Delay: 5.2	Intersection LOS: A
Intersection Capacity Utilization 57.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Route 229 & Page Park Road/Bristol Eastern High School



Lane Group	Ø3
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	NBL	NBT	SBT	SBR	NEL	NER	Ø3
Lane Configurations							
Traffic Volume (vph)	5	560	585	50	5	15	
Future Volume (vph)	5	560	585	50	5	15	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.989		0.897		
Flt Protected					0.988		
Satd. Flow (prot)	0	1863	1842	0	1651	0	
Flt Permitted		0.996			0.988		
Satd. Flow (perm)	0	1855	1842	0	1651	0	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			6		16		
Link Speed (mph)		35	35		30		
Link Distance (ft)		1271	662		359		
Travel Time (s)		24.8	12.9		8.2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	5	609	636	54	5	16	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	614	690	0	21	0	
Turn Type	Perm	NA	NA		Prot		
Protected Phases		2	2		4		3
Permitted Phases	2						
Detector Phase	2	2	2		4		
Switch Phase							
Minimum Initial (s)	20.0	20.0	20.0		10.0		1.0
Minimum Split (s)	25.0	25.0	25.0		24.5		22.5
Total Split (s)	25.0	25.0	25.0		24.0		21.0
Total Split (%)	35.7%	35.7%	35.7%		34.3%		30%
Maximum Green (s)	20.0	20.0	20.0		20.0		19.0
Yellow Time (s)	4.0	4.0	4.0		3.0		2.0
All-Red Time (s)	1.0	1.0	1.0		1.0		0.0
Lost Time Adjust (s)		0.0	0.0		0.0		
Total Lost Time (s)		5.0	5.0		4.0		
Lead/Lag					Lag		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	5.0	5.0	5.0		3.0		0.2
Recall Mode	C-Min	C-Min	C-Min		None		None
Walk Time (s)							7.0
Flash Dont Walk (s)							10.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)		66.2	66.2		10.0		
Actuated g/C Ratio		0.95	0.95		0.14		
v/c Ratio		0.35	0.40		0.08		
Control Delay		1.8	1.1		16.1		
Queue Delay		0.0	0.0		0.0		
Total Delay		1.8	1.1		16.1		
LOS		A	A		B		
Approach Delay		1.8	1.1		16.1		
Approach LOS		A	A		B		

Lane Group	NBL	NBT	SBT	SBR	NEL	NER	Ø3
Queue Length 50th (ft)		0	0		2		
Queue Length 95th (ft)		132	48		20		
Internal Link Dist (ft)		1191	582		279		
Turn Bay Length (ft)							
Base Capacity (vph)		1754	1742		483		
Starvation Cap Reductn		0	0		0		
Spillback Cap Reductn		0	0		0		
Storage Cap Reductn		0	0		0		
Reduced v/c Ratio		0.35	0.40		0.04		

Intersection Summary	
Area Type: Other	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 2 (3%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.40	
Intersection Signal Delay: 1.7	Intersection LOS: A
Intersection Capacity Utilization 49.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Woodland Street & Route 229

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations							
Traffic Volume (vph)	140	35	530	65	155	585	
Future Volume (vph)	140	35	530	65	155	585	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0		0	160		
Storage Lanes	1	0		0	1		
Taper Length (ft)	25				100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	0.973		0.985				
Flt Protected	0.962				0.950		
Satd. Flow (prot)	1744	0	1835	0	1770	1863	
Flt Permitted	0.962				0.950		
Satd. Flow (perm)	1744	0	1835	0	1770	1863	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)	10		6				
Link Speed (mph)	30		35			35	
Link Distance (ft)	835		2121			1598	
Travel Time (s)	19.0		41.3			31.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	152	38	576	71	168	636	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	190	0	647	0	168	636	
Turn Type	Prot		NA		Prot	NA	
Protected Phases	4		2		1	1 2	3
Permitted Phases							
Detector Phase	4		2		1	1 2	
Switch Phase							
Minimum Initial (s)	9.0		15.0		5.0		1.0
Minimum Split (s)	22.0		20.9		9.0		21.0
Total Split (s)	34.0		55.0		9.0		21.0
Total Split (%)	28.6%		46.2%		7.6%		18%
Maximum Green (s)	30.0		49.1		5.0		17.0
Yellow Time (s)	3.0		4.0		3.0		4.0
All-Red Time (s)	1.0		1.9		1.0		0.0
Lost Time Adjust (s)	0.0		0.0		0.0		
Total Lost Time (s)	4.0		5.9		4.0		
Lead/Lag	Lag		Lag		Lead		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0		4.0		1.0		0.2
Recall Mode	None		Min		None		None
Walk Time (s)							7.0
Flash Dont Walk (s)							10.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	12.8		37.4		5.2	48.7	
Actuated g/C Ratio	0.18		0.54		0.07	0.70	
v/c Ratio	0.58		0.66		1.28	0.49	
Control Delay	34.4		15.1		206.5	6.5	
Queue Delay	0.0		0.0		0.0	0.0	
Total Delay	34.4		15.1		206.5	6.5	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
LOS	C		B		F	A	
Approach Delay	34.4		15.1			48.3	
Approach LOS	C		B			D	
Queue Length 50th (ft)	72		175		~97	98	
Queue Length 95th (ft)	152		319		#254	201	
Internal Link Dist (ft)	755		2041			1518	
Turn Bay Length (ft)					160		
Base Capacity (vph)	782		1340		131	1595	
Starvation Cap Reductn	0		0		0	0	
Spillback Cap Reductn	0		0		0	0	
Storage Cap Reductn	0		0		0	0	
Reduced v/c Ratio	0.24		0.48		1.28	0.40	

Intersection Summary

Area Type: Other
Cycle Length: 119
Actuated Cycle Length: 69.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.28
Intersection Signal Delay: 33.6 Intersection LOS: C
Intersection Capacity Utilization 61.9% ICU Level of Service B
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Route 229 & West Washington Street

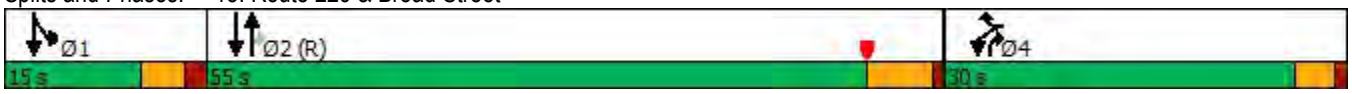
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	125	35	515	235	40	625
Future Volume (vph)	125	35	515	235	40	625
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	490	325		130	220	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	1583	3539	1583	1770	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		38		255		
Link Speed (mph)	30		30			30
Link Distance (ft)	911		424			459
Travel Time (s)	20.7		9.6			10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	38	560	255	43	679
Shared Lane Traffic (%)						
Lane Group Flow (vph)	136	38	560	255	43	679
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4	2	4	1	1 2
Permitted Phases				2		
Detector Phase	4	4	2	4	1	1 2
Switch Phase						
Minimum Initial (s)	6.0	6.0	15.0	6.0	6.0	
Minimum Split (s)	25.0	25.0	20.9	25.0	10.9	
Total Split (s)	30.0	30.0	55.0	30.0	15.0	
Total Split (%)	30.0%	30.0%	55.0%	30.0%	15.0%	
Maximum Green (s)	26.0	26.0	49.1	26.0	10.1	
Yellow Time (s)	3.0	3.0	4.9	3.0	3.3	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	5.9	4.0	4.9	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	3.0	2.0	3.0	
Recall Mode	None	None	C-Min	None	None	
Walk Time (s)	1.0	1.0		1.0		
Flash Dont Walk (s)	20.0	20.0		20.0		
Pedestrian Calls (#/hr)	0	0		0		
Act Effct Green (s)	8.4	8.4	64.9	79.2	11.9	82.7
Actuated g/C Ratio	0.08	0.08	0.65	0.79	0.12	0.83
v/c Ratio	0.47	0.23	0.24	0.20	0.20	0.23
Control Delay	48.7	16.7	7.4	0.5	40.8	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.7	16.7	7.4	0.5	40.8	2.2

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS	D	B	A	A	D	A
Approach Delay	41.7		5.2			4.5
Approach LOS	D		A			A
Queue Length 50th (ft)	43	0	36	0	25	34
Queue Length 95th (ft)	71	30	137	2	56	56
Internal Link Dist (ft)	831		344			379
Turn Bay Length (ft)	490	325		130	220	
Base Capacity (vph)	892	439	2295	1533	216	2868
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.09	0.24	0.17	0.20	0.24

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 86 (86%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 8.6 Intersection LOS: A
Intersection Capacity Utilization 36.6% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 18: Route 229 & Broad Street



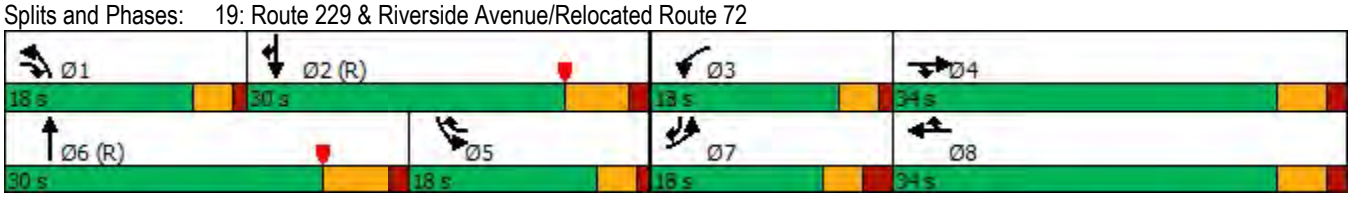
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	480	325	5	510	110	215	500	20	75	530	145
Future Volume (vph)	135	480	325	5	510	110	215	500	20	75	530	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	525		765	65		300	525		0	200		275
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	150			135			90			75		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850			0.850		0.994				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	1770	3539	1583	1770	3518	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1863	1583	1770	3539	1583	1770	3518	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			353			137		4				95
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		918			774			907			424	
Travel Time (s)		20.9			17.6			20.6			9.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	522	353	5	554	120	234	543	22	82	576	158
Shared Lane Traffic (%)												
Lane Group Flow (vph)	147	522	353	5	554	120	234	565	0	82	576	158
Turn Type	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA		Prot	NA	pt+ov
Protected Phases	7	4	4 1	3	8	5 8	1	6		5	2	2 7
Permitted Phases												
Detector Phase	7	4	4 1	3	8	5 8	1	6		5	2	2 7
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	15.0		6.0	15.0	
Minimum Split (s)	11.2	28.4		10.0	28.4		10.0	21.4		10.0	21.4	
Total Split (s)	18.0	34.0		18.0	34.0		18.0	30.0		18.0	30.0	
Total Split (%)	18.0%	34.0%		18.0%	34.0%		18.0%	30.0%		18.0%	30.0%	
Maximum Green (s)	12.8	28.6		14.0	28.6		14.0	23.6		14.0	23.6	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	4.9		3.0	4.9	
All-Red Time (s)	2.2	1.7		1.0	1.7		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.4		4.0	5.4		4.0	6.4		4.0	6.4	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		22.0			22.0							
Flash Dont Walk (s)		1.0			1.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	8.7	34.8	57.4	6.0	23.0	39.1	18.6	32.7		14.7	28.8	42.7
Actuated g/C Ratio	0.09	0.35	0.57	0.06	0.23	0.39	0.19	0.33		0.15	0.29	0.43
v/c Ratio	0.49	0.80	0.33	0.05	0.68	0.17	0.71	0.49		0.32	0.57	0.22
Control Delay	49.0	40.0	2.0	45.4	39.4	1.8	52.2	29.9		41.7	35.0	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	49.0	40.0	2.0	45.4	39.4	1.8	52.2	29.9		41.7	35.0	6.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	D	A	D	D	A	D	C		D	C	A
Approach Delay		28.2			32.8			36.4			30.2	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)	46	292	0	3	172	0	137	152		37	155	14
Queue Length 95th (ft)	76	420	39	15	206	14	#298	231		89	234	51
Internal Link Dist (ft)		838			694			827			344	
Turn Bay Length (ft)	525		765	65		300	525			200		275
Base Capacity (vph)	439	649	1058	247	1023	787	328	1151		260	1019	791
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.33	0.80	0.33	0.02	0.54	0.15	0.71	0.49		0.32	0.57	0.20

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 70 (70%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 31.6 Intersection LOS: C
Intersection Capacity Utilization 73.3% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 19: Route 229 & Riverside Avenue/Relocated Route 72



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	630	370	145	210	110	155	515	115	75	970	60
Future Volume (vph)	115	630	370	145	210	110	155	515	115	75	970	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	240		240	400		0	145		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	150			150			70			90		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.945			0.948			0.973			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3345	0	1770	3355	0	1770	3444	0	1770	3507	0
Flt Permitted	0.543			0.090			0.320			0.320		
Satd. Flow (perm)	1011	3345	0	168	3355	0	596	3444	0	596	3507	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		83			67			18			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		669			802			666			907	
Travel Time (s)		15.2			18.2			15.1			20.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	685	402	158	228	120	168	560	125	82	1054	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	125	1087	0	158	348	0	168	685	0	82	1119	0
Turn Type	pm+pt	NA		pm+pt	NA		D.P+P	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1 2	2 5		1	5	
Permitted Phases	4			8			5			5		
Detector Phase	7	4		3	8		1 2	2 5		1	5	
Switch Phase												
Minimum Initial (s)	4.0	7.0		4.0	7.0					4.0	15.0	
Minimum Split (s)	8.2	13.0		8.0	13.0					8.0	22.3	
Total Split (s)	12.0	44.0		12.0	44.0					10.0	23.0	
Total Split (%)	8.6%	31.4%		8.6%	31.4%					7.1%	16.4%	
Maximum Green (s)	7.8	38.0		8.0	38.0					6.0	15.7	
Yellow Time (s)	3.2	3.8		3.0	3.8					3.0	4.9	
All-Red Time (s)	1.0	2.2		1.0	2.2					1.0	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)	4.2	6.0		4.0	6.0					4.0	7.3	
Lead/Lag	Lead	Lag		Lead	Lag					Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0					2.0	3.0	
Recall Mode	None	None		None	None					None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	64.1	53.8		70.4	57.2		48.7	38.5		29.2	15.7	
Actuated g/C Ratio	0.46	0.38		0.50	0.41		0.35	0.28		0.21	0.11	
v/c Ratio	0.25	0.81		0.71	0.25		0.37	0.71		0.39	2.83	
Control Delay	23.1	42.3		43.6	24.8		33.0	49.4		38.8	850.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	23.1	42.3		43.6	24.8		33.0	49.4		38.8	850.0	

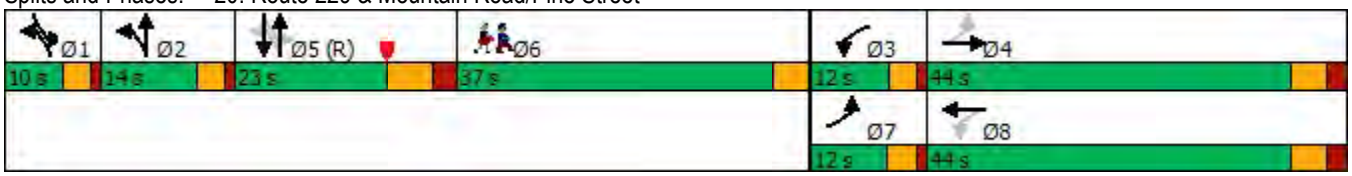
Lane Group	Ø2	Ø6
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	6
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	4.0	1.0
Minimum Split (s)	8.0	37.0
Total Split (s)	14.0	37.0
Total Split (%)	10%	26%
Maximum Green (s)	10.0	33.0
Yellow Time (s)	3.0	4.0
All-Red Time (s)	1.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	2.0	3.0
Recall Mode	Min	None
Walk Time (s)		7.0
Flash Dont Walk (s)		26.0
Pedestrian Calls (#/hr)		5
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	D		D	C		C	D		D	F	
Approach Delay		40.3			30.7			46.2			794.6	
Approach LOS		D			C			D			F	
Queue Length 50th (ft)	58	437		75	87		95	275		44	~924	
Queue Length 95th (ft)	126	#710		#263	155		182	383		98	#1064	
Internal Link Dist (ft)		589			722			586			827	
Turn Bay Length (ft)	200			240			400			145		
Base Capacity (vph)	513	1335		223	1409		456	960		209	396	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.24	0.81		0.71	0.25		0.37	0.71		0.39	2.83	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 88 (63%), Referenced to phase 5:NBSB, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.83
Intersection Signal Delay: 280.5 Intersection LOS: F
Intersection Capacity Utilization 92.4% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: Route 229 & Mountain Road/Pine Street



Lane Group	Ø2	Ø6
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	20	15	5	0	5	10	660	25	10	1465	130
Future Volume (vph)	120	20	15	5	0	5	10	660	25	10	1465	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	130		0	70		0	55		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			25			50			70		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.971			0.850			0.995			0.988	
Flt Protected	0.950	0.973		0.950			0.950			0.950		
Satd. Flow (prot)	1681	1672	0	1770	1583	0	1770	3522	0	1770	3497	0
Flt Permitted	0.950	0.973		0.950			0.088			0.347		
Satd. Flow (perm)	1681	1672	0	1770	1583	0	164	3522	0	646	3497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			462			2			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		650			212			757			666	
Travel Time (s)		14.8			4.8			17.2			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	22	16	5	0	5	11	717	27	11	1592	141
Shared Lane Traffic (%)	35%											
Lane Group Flow (vph)	84	84	0	5	5	0	11	744	0	11	1733	0
Turn Type	Split	NA		Split	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases							6			2		
Detector Phase	4	4		8	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	11.5	11.5		10.8	10.8		9.0	21.7		9.0	21.7	
Total Split (s)	33.0	33.0		33.0	33.0		12.0	55.0		12.0	55.0	
Total Split (%)	20.1%	20.1%		20.1%	20.1%		7.3%	33.5%		7.3%	33.5%	
Maximum Green (s)	27.5	27.5		28.2	28.2		8.0	48.3		8.0	48.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	4.9		3.0	4.9	
All-Red Time (s)	2.5	2.5		1.8	1.8		1.0	1.8		1.0	1.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		4.8	4.8		4.0	6.7		4.0	6.7	
Lead/Lag	Lag	Lag					Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	12.6	12.6		6.0	6.0		129.4	124.6		130.1	124.9	
Actuated g/C Ratio	0.08	0.08		0.04	0.04		0.79	0.76		0.79	0.76	
v/c Ratio	0.65	0.63		0.08	0.01		0.06	0.28		0.02	0.65	
Control Delay	95.7	87.7		79.0	0.0		9.4	10.1		8.8	15.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	2.4	
Total Delay	95.7	87.7		79.0	0.0		9.4	10.1		8.8	18.1	

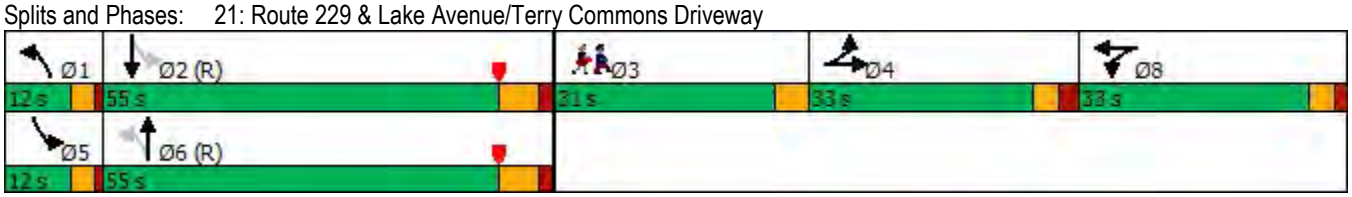
Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	19%
Maximum Green (s)	27.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	F		E	A		A	B		A	B	
Approach Delay		91.7			39.5			10.1			18.0	
Approach LOS		F			D			B			B	
Queue Length 50th (ft)	93	87		5	0		1	64		1	235	
Queue Length 95th (ft)	156	149		21	0		15	317		15	#1134	
Internal Link Dist (ft)		570			132			677			586	
Turn Bay Length (ft)	200			130			70			55		
Base Capacity (vph)	281	285		304	654		208	2675		570	2664	
Starvation Cap Reductn	0	0		0	0		0	0		0	766	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.30	0.29		0.02	0.01		0.05	0.28		0.02	0.91	

Intersection Summary

Area Type: Other
Cycle Length: 164
Actuated Cycle Length: 164
Offset: 28 (17%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 135
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 20.5 Intersection LOS: C
Intersection Capacity Utilization 65.8% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 21: Route 229 & Lake Avenue/Terry Commons Driveway



Lane Group	Ø3
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	10	75	20	5	20	70	605	55	100	1165	50
Future Volume (vph)	45	10	75	20	5	20	70	605	55	100	1165	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		175	60		0	180		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			75			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.922				0.850		0.987			0.994	
Flt Protected		0.983			0.961		0.950			0.950		
Satd. Flow (prot)	0	1688	0	0	1790	1583	1770	3493	0	1770	3518	0
Flt Permitted		0.875			0.653		0.114			0.332		
Satd. Flow (perm)	0	1503	0	0	1216	1583	212	3493	0	618	3518	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		82				106		14			6	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		674			483			840			981	
Travel Time (s)		15.3			11.0			14.3			22.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	11	82	22	5	22	76	658	60	109	1266	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	142	0	0	27	22	76	718	0	109	1320	0
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		7			4 7		5	2		1	6	
Permitted Phases	7			4 7		4 7	2			6		
Detector Phase	7	7		4 7	4 7	4 7	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0					5.0	15.0		5.0	15.0	
Minimum Split (s)	10.8	10.8					9.0	21.1		9.0	21.1	
Total Split (s)	19.8	19.8					9.0	29.0		9.0	29.0	
Total Split (%)	27.2%	27.2%					12.3%	39.8%		12.3%	39.8%	
Maximum Green (s)	14.0	14.0					5.0	22.9		5.0	22.9	
Yellow Time (s)	3.0	3.0					3.0	4.2		3.0	4.2	
All-Red Time (s)	2.8	2.8					1.0	1.9		1.0	1.9	
Lost Time Adjust (s)		0.0					0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.8					4.0	6.1		4.0	6.1	
Lead/Lag	Lag	Lag					Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes										
Vehicle Extension (s)	2.0	2.0					2.0	0.2		2.0	0.2	
Recall Mode	None	None					None	C-Max		None	C-Max	
Walk Time (s)	24.0	24.0										
Flash Dont Walk (s)	1.0	1.0										
Pedestrian Calls (#/hr)	0	0										
Act Effct Green (s)		8.1			16.7	16.7	46.2	40.2		46.9	40.6	
Actuated g/C Ratio		0.11			0.23	0.23	0.63	0.55		0.64	0.56	
v/c Ratio		0.59			0.10	0.05	0.29	0.37		0.22	0.67	
Control Delay		24.7			18.5	0.2	10.4	14.7		8.3	21.0	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		24.7			18.5	0.2	10.4	14.7		8.3	21.0	

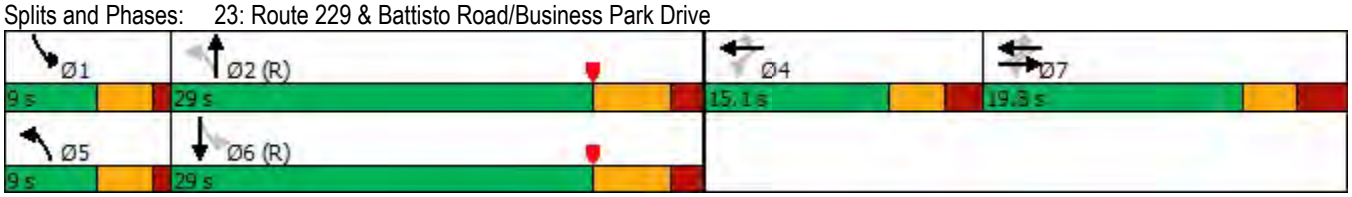
Lane Group	Ø4
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	4
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	12.1
Total Split (s)	15.1
Total Split (%)	21%
Maximum Green (s)	10.0
Yellow Time (s)	3.0
All-Red Time (s)	2.1
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		C			B	A	B	B		A	C	
Approach Delay		24.7			10.3			14.3			20.1	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)		26			9	0	13	116		19	271	
Queue Length 95th (ft)		73			23	0	36	198		48	#510	
Internal Link Dist (ft)		594			403			760			901	
Turn Bay Length (ft)						175	60			180		
Base Capacity (vph)		354			345	525	263	1934		499	1962	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.40			0.08	0.04	0.29	0.37		0.22	0.67	

Intersection Summary

Area Type: Other
Cycle Length: 72.9
Actuated Cycle Length: 72.9
Offset: 34 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 18.2 Intersection LOS: B
Intersection Capacity Utilization 65.5% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 23: Route 229 & Battisto Road/Business Park Drive



Lane Group	Ø4
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	80	45	65	140	15	10	595	45	325	925	90
Future Volume (vph)	125	80	45	65	140	15	10	595	45	325	925	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	14	12
Storage Length (ft)	125		0	160		0	160		0	235		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			100			250		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.946			0.986			0.989			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1762	0	1770	1837	0	1770	3500	0	1770	3726	0
Flt Permitted	0.651			0.670			0.259			0.348		
Satd. Flow (perm)	1213	1762	0	1248	1837	0	482	3500	0	648	3726	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49			9			13			26	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		744			601			1500			891	
Travel Time (s)		16.9			13.7			25.6			15.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	87	49	71	152	16	11	647	49	353	1005	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	136	136	0	71	168	0	11	696	0	353	1103	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4			2			1 2		
Detector Phase	4	4		4	4		2	2		1	1 2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		5.0		
Minimum Split (s)	29.3	29.3		29.3	29.3		23.3	23.3		9.0		
Total Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		12.0		
Total Split (%)	40.0%	40.0%		40.0%	40.0%		40.0%	40.0%		20.0%		
Maximum Green (s)	18.7	18.7		18.7	18.7		15.7	15.7		8.0		
Yellow Time (s)	3.6	3.6		3.6	3.6		4.3	4.3		3.0		
All-Red Time (s)	1.7	1.7		1.7	1.7		4.0	4.0		1.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		
Total Lost Time (s)	5.3	5.3		5.3	5.3		8.3	8.3		4.0		
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		1.0		
Recall Mode	None	None		None	None		C-Max	C-Max		None		
Walk Time (s)	23.0	23.0		23.0	23.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	11.8	11.8		11.8	11.8		19.7	19.7		34.9	38.9	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.33	0.33		0.58	0.65	
v/c Ratio	0.57	0.35		0.29	0.46		0.07	0.60		0.61	0.46	
Control Delay	30.1	15.2		21.8	22.8		9.1	11.9		13.1	6.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	30.1	15.2		21.8	22.8		9.1	11.9		13.1	6.6	
LOS	C	B		C	C		A	B		B	A	
Approach Delay		22.7			22.5			11.9			8.2	
Approach LOS		C			C			B			A	
Queue Length 50th (ft)	46	27		22	52		1	70		44	79	
Queue Length 95th (ft)	81	59		46	86		m4	#137		#141	166	
Internal Link Dist (ft)		664			521			1420			811	
Turn Bay Length (ft)	125			160			160			235		
Base Capacity (vph)	378	582		388	578		158	1160		578	2422	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.36	0.23		0.18	0.29		0.07	0.60		0.61	0.46	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 53 (88%), Referenced to phase 2:NBSB and 6:, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 11.9	Intersection LOS: B
Intersection Capacity Utilization 75.2%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Route 229 & Cross Street/Redstone Hill Road

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	85	50	50	585	895	205
Future Volume (vph)	85	50	50	585	895	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12
Grade (%)	0%			6%	0%	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850			0.972	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1770	1794	0	3419	3440	0
Flt Permitted	0.950			0.783		
Satd. Flow (perm)	1770	1794	0	2688	3440	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		54			65	
Link Speed (mph)	30			40	40	
Link Distance (ft)	411			1591	1500	
Travel Time (s)	9.3			27.1	25.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	54	54	636	973	223
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	54	0	690	1196	0
Turn Type	Prot	Prot	Perm	NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases			2		2	
Detector Phase	4	4	2	2	2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	15.0	15.0	15.0	
Minimum Split (s)	20.4	20.4	22.6	22.6	22.6	
Total Split (s)	23.0	23.0	37.0	37.0	37.0	
Total Split (%)	38.3%	38.3%	61.7%	61.7%	61.7%	
Maximum Green (s)	18.6	18.6	29.4	29.4	29.4	
Yellow Time (s)	3.0	3.0	4.4	4.4	4.4	
All-Red Time (s)	1.4	1.4	3.2	3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.4	4.4		7.6	7.6	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	0.2	0.2	0.2	
Recall Mode	None	None	C-Min	C-Min	C-Min	
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	6.9	6.9		44.5	44.5	
Actuated g/C Ratio	0.12	0.12		0.74	0.74	
v/c Ratio	0.45	0.21		0.35	0.47	
Control Delay	31.4	9.8		3.0	2.4	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	31.4	9.8		3.0	2.4	
LOS	C	A		A	A	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach Delay	23.4			3.0	2.4	
Approach LOS	C			A	A	
Queue Length 50th (ft)	32	0		22	46	
Queue Length 95th (ft)	67	25		28	33	
Internal Link Dist (ft)	331			1511	1420	
Turn Bay Length (ft)						
Base Capacity (vph)	548	593		1993	2568	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.17	0.09		0.35	0.47	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 31 (52%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay: 4.1	Intersection LOS: A
Intersection Capacity Utilization 69.2%	ICU Level of Service C
Analysis Period (min) 15	

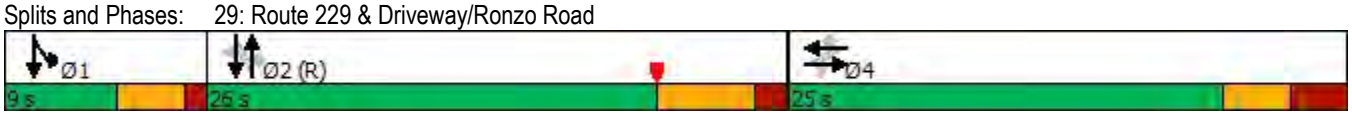
Splits and Phases: 27: Route 229 & Enterprise Dr North

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	265	0	45	0	605	165	75	805	0
Future Volume (vph)	0	0	0	265	0	45	0	605	165	75	805	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			7%			6%	
Storage Length (ft)	0		0	0		300	280		130	165		165
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt						0.850			0.850			
Flt Protected					0.950					0.950		
Satd. Flow (prot)	0	1863	0	0	1770	1583	1798	3415	1528	1717	3433	0
Flt Permitted					0.757					0.345		
Satd. Flow (perm)	0	1863	0	0	1410	1583	1798	3415	1528	623	3433	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						125			179			
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		261			414			713			1591	
Travel Time (s)		5.9			9.4			12.2			27.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	288	0	49	0	658	179	82	875	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	288	49	0	658	179	82	875	0
Turn Type				Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4		4	2		2	1 2		
Detector Phase	4	4		4	4	4	2	2	2	1	1 2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	15.0	15.0	15.0	5.0		
Minimum Split (s)	30.6	30.6		30.6	30.6	30.6	20.9	20.9	20.9	9.0		
Total Split (s)	25.0	25.0		25.0	25.0	25.0	26.0	26.0	26.0	9.0		
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	43.3%	43.3%	43.3%	15.0%		
Maximum Green (s)	19.4	19.4		19.4	19.4	19.4	20.1	20.1	20.1	5.0		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.4	4.4	4.4	3.0		
All-Red Time (s)	2.6	2.6		2.6	2.6	2.6	1.5	1.5	1.5	1.0		
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		5.6			5.6	5.6	5.9	5.9	5.9	4.0		
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	0.2	0.2	0.2	1.0		
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None		
Walk Time (s)	24.0	24.0		24.0	24.0	24.0						
Flash Dont Walk (s)	1.0	1.0		1.0	1.0	1.0						
Pedestrian Calls (#/hr)	0	0		0	0	0						
Act Effct Green (s)					15.0	15.0		22.2	22.2	31.4	35.4	
Actuated g/C Ratio					0.25	0.25		0.37	0.37	0.52	0.59	
v/c Ratio					0.82	0.10		0.52	0.26	0.18	0.43	
Control Delay					39.1	0.4		7.1	1.8	8.0	11.0	
Queue Delay					0.0	0.0		0.0	0.0	0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					39.1	0.4		7.1	1.8	8.0	11.0	
LOS					D	A		A	A	A	B	
Approach Delay					33.5			6.0			10.8	
Approach LOS					C			A			B	
Queue Length 50th (ft)					96	0		22	0	21	146	
Queue Length 95th (ft)					161	0		11	1	m29	200	
Internal Link Dist (ft)		181			334			633			1511	
Turn Bay Length (ft)						300			130	165		
Base Capacity (vph)					455	596		1261	677	458	2023	
Starvation Cap Reductn					0	0		0	0	0	0	
Spillback Cap Reductn					0	0		0	0	0	0	
Storage Cap Reductn					0	0		0	0	0	0	
Reduced v/c Ratio					0.63	0.08		0.52	0.26	0.18	0.43	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 57 (95%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 12.5	Intersection LOS: B
Intersection Capacity Utilization 62.4%	ICU Level of Service B
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 29: Route 229 & Driveway/Ronzo Road



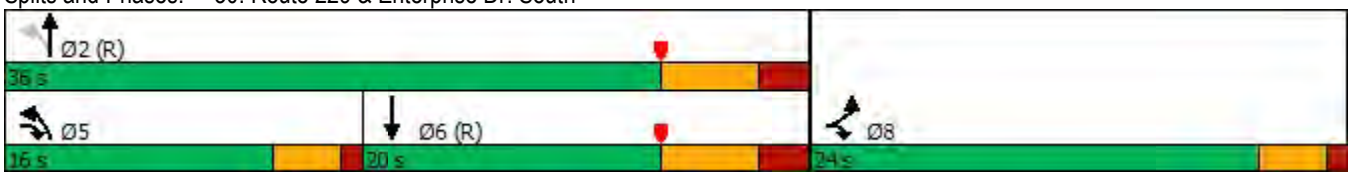
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	90	220	760	1035	35
Future Volume (vph)	10	90	220	760	1035	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			7%	7%	
Storage Length (ft)	0	0	745			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.995	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1708	3415	3398	0
Flt Permitted	0.950		0.152			
Satd. Flow (perm)	1770	1583	273	3415	3398	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		1			5	
Link Speed (mph)	30			40	40	
Link Distance (ft)	703			1424	713	
Travel Time (s)	16.0			24.3	12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	98	239	826	1125	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	98	239	826	1163	0
Turn Type	Prot	pt+ov	pm+pt	NA	NA	
Protected Phases	8	8 5	5	2	6	
Permitted Phases			2			
Detector Phase	8	8 5	5	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	24.0		9.0	21.7	21.7	
Total Split (s)	24.0		16.0	36.0	20.0	
Total Split (%)	40.0%		26.7%	60.0%	33.3%	
Maximum Green (s)	20.0		12.0	29.3	13.3	
Yellow Time (s)	3.0		3.0	4.4	4.4	
All-Red Time (s)	1.0		1.0	2.3	2.3	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0		4.0	6.7	6.7	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	C-Min	C-Min	
Walk Time (s)	19.0					
Flash Dont Walk (s)	1.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	8.2	18.4	45.7	44.4	30.9	
Actuated g/C Ratio	0.14	0.31	0.76	0.74	0.52	
v/c Ratio	0.05	0.20	0.59	0.33	0.66	
Control Delay	21.7	13.5	9.5	2.6	7.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Delay	21.7	13.5	9.5	2.6	7.2	
LOS	C	B	A	A	A	
Approach Delay	14.3			4.2	7.2	
Approach LOS	B			A	A	
Queue Length 50th (ft)	4	24	2	3	65	
Queue Length 95th (ft)	15	45	19	3	#108	
Internal Link Dist (ft)	623			1344	633	
Turn Bay Length (ft)			745			
Base Capacity (vph)	590	630	494	2525	1750	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.02	0.16	0.48	0.33	0.66	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 6.1	Intersection LOS: A
Intersection Capacity Utilization 58.3%	ICU Level of Service B
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 30: Route 229 & Enterprise Dr. South



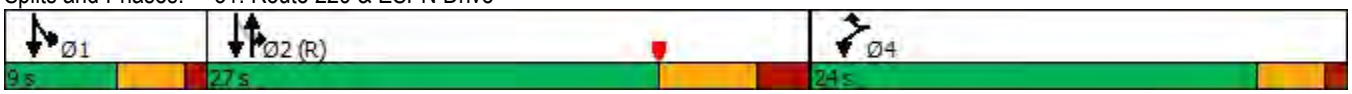
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	50	890	35	100	1045
Future Volume (vph)	10	50	890	35	100	1045
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			7%
Storage Length (ft)	0	0		105	95	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3539	1583	1708	3415
Flt Permitted	0.950				0.240	
Satd. Flow (perm)	1770	1583	3539	1583	431	3415
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		54		35		
Link Speed (mph)	30		40			40
Link Distance (ft)	370		539			1424
Travel Time (s)	8.4		9.2			24.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	54	967	38	109	1136
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	54	967	38	109	1136
Turn Type	Prot	Prot	NA	Prot	pm+pt	NA
Protected Phases	4	4	2	2	1	1 2
Permitted Phases					1 2	
Detector Phase	4	4	2	2	1	1 2
Switch Phase						
Minimum Initial (s)	5.0	5.0	14.0	14.0	4.0	
Minimum Split (s)	22.1	22.1	20.8	20.8	8.0	
Total Split (s)	24.0	24.0	27.0	27.0	9.0	
Total Split (%)	40.0%	40.0%	45.0%	45.0%	15.0%	
Maximum Green (s)	19.9	19.9	20.2	20.2	5.0	
Yellow Time (s)	3.0	3.0	4.4	4.4	3.0	
All-Red Time (s)	1.1	1.1	2.4	2.4	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.1	4.1	6.8	6.8	4.0	
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	5.0	5.0	2.0	
Recall Mode	None	None	C-Min	C-Min	None	
Walk Time (s)	17.0	17.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	5.6	5.6	30.6	30.6	46.0	51.6
Actuated g/C Ratio	0.09	0.09	0.51	0.51	0.77	0.86
v/c Ratio	0.07	0.28	0.54	0.05	0.18	0.39
Control Delay	25.1	12.2	7.5	1.7	3.0	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	25.1	12.2	7.5	1.7	3.0	1.6
LOS	C	B	A	A	A	A
Approach Delay	14.4		7.2			1.7
Approach LOS	B		A			A
Queue Length 50th (ft)	4	0	20	0	1	6
Queue Length 95th (ft)	16	27	#276	7	m16	81
Internal Link Dist (ft)	290		459			1344
Turn Bay Length (ft)				105	95	
Base Capacity (vph)	587	561	1802	823	598	2934
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.10	0.54	0.05	0.18	0.39

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 15.7 (26%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay: 4.5	Intersection LOS: A
Intersection Capacity Utilization 46.7%	ICU Level of Service A
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 31: Route 229 & ESPN Drive



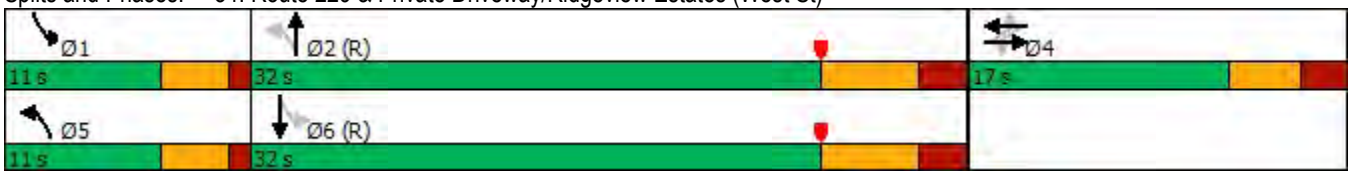
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	10	20	0	0	25	945	5	5	1025	35
Future Volume (vph)	5	0	10	20	0	0	25	945	5	5	1025	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		50	0		120	120		0	135		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	25			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.850						0.999			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1863	0	1770	3536	0	1770	1853	0
Flt Permitted							0.101			0.270		
Satd. Flow (perm)	1863	1583	0	1863	1863	0	188	3536	0	503	1853	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		260						1			4	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		299			498			1447			922	
Travel Time (s)		6.8			11.3			24.7			15.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	0	11	22	0	0	27	1027	5	5	1114	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	11	0	22	0	0	27	1032	0	5	1152	0
Turn Type	Perm	NA		Perm			pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4			2			6		
Detector Phase	4	4		4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	13.4	13.4		13.4	13.4		9.0	21.6		9.0	21.6	
Total Split (s)	17.0	17.0		17.0	17.0		11.0	32.0		11.0	32.0	
Total Split (%)	28.3%	28.3%		28.3%	28.3%		18.3%	53.3%		18.3%	53.3%	
Maximum Green (s)	11.6	11.6		11.6	11.6		7.0	25.4		7.0	25.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.1	2.1		2.1	2.1		1.0	2.2		1.0	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	5.4		5.4	5.4		4.0	6.6		4.0	6.6	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	0.2		1.5	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	8.0	8.0		8.0			49.8	50.2		49.0	48.4	
Actuated g/C Ratio	0.13	0.13		0.13			0.83	0.84		0.82	0.81	
v/c Ratio	0.02	0.03		0.09			0.09	0.35		0.01	0.77	
Control Delay	23.0	0.1		23.9			1.2	1.0		1.2	16.8	
Queue Delay	0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Delay	23.0	0.1		23.9			1.2	1.0		1.2	16.8	
LOS	C	A		C			A	A		A	B	
Approach Delay		7.3			23.9			1.0			16.7	
Approach LOS		A			C			A			B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	2	0		7			0	0		0	353	
Queue Length 95th (ft)	10	0		25			m2	m25		m1	#777	
Internal Link Dist (ft)		219			418			1367			842	
Turn Bay Length (ft)	50						120			135		
Base Capacity (vph)	360	515		360			342	2958		565	1495	
Starvation Cap Reductn	0	0		0			0	0		0	0	
Spillback Cap Reductn	0	0		0			0	0		0	0	
Storage Cap Reductn	0	0		0			0	0		0	0	
Reduced v/c Ratio	0.01	0.02		0.06			0.08	0.35		0.01	0.77	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 50 (83%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 9.3 Intersection LOS: A
Intersection Capacity Utilization 73.8% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 34: Route 229 & Private Driveway/Ridgeview Estates (West St)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	100	35	50	15	5	200	880	55	130	900	25
Future Volume (vph)	85	100	35	50	15	5	200	880	55	130	900	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	80		0	125		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.979			0.964			0.991			0.996	
Flt Protected		0.981		0.950			0.950			0.950		
Satd. Flow (prot)	0	1789	0	1770	1796	0	1770	3507	0	1770	1855	0
Flt Permitted		0.865		0.549			0.139			0.234		
Satd. Flow (perm)	0	1577	0	1023	1796	0	259	3507	0	436	1855	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			5			14			3	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		906			1161			1141			1447	
Travel Time (s)		20.6			26.4			19.4			24.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	109	38	54	16	5	217	957	60	141	978	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	239	0	54	21	0	217	1017	0	141	1005	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Detector Phase	4	4		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	25.4	25.4		25.4	25.4		9.0	22.1		9.0	22.1	
Total Split (s)	15.0	15.0		15.0	15.0		11.0	34.0		11.0	34.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		18.3%	56.7%		18.3%	56.7%	
Maximum Green (s)	8.6	8.6		8.6	8.6		7.0	26.9		7.0	26.9	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	2.7		1.0	2.7	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.4		6.4	6.4		4.0	7.1		4.0	7.1	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	0.2		2.0	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	18.0	18.0		18.0	18.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		8.6		8.6	8.6		38.2	29.6		36.5	27.3	
Actuated g/C Ratio		0.14		0.14	0.14		0.64	0.49		0.61	0.46	
v/c Ratio		1.01		0.37	0.08		0.66	0.58		0.35	1.19	
Control Delay		90.7		31.3	20.3		17.6	18.8		4.1	110.8	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		90.7		31.3	20.3		17.6	18.8		4.1	110.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		F		C	C		B	B		A	F	
Approach Delay		90.7			28.2			18.6			97.7	
Approach LOS		F			C			B			F	
Queue Length 50th (ft)		~84		18	5		44	180		4	~483	
Queue Length 95th (ft)		#213		48	22		m58	277		m0	#698	
Internal Link Dist (ft)		826			1081			1061			1367	
Turn Bay Length (ft)							80			125		
Base Capacity (vph)		237		146	261		341	1739		427	846	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		1.01		0.37	0.08		0.64	0.58		0.33	1.19	

Intersection Summary

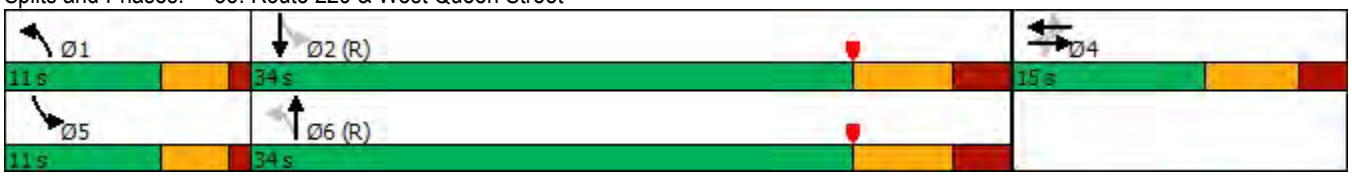
Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 24 (40%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.19
Intersection Signal Delay: 58.9 Intersection LOS: E
Intersection Capacity Utilization 93.3% ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 35: Route 229 & West Queen Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	135	65	1130	955	35
Future Volume (vph)	35	135	65	1130	955	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt		0.850			0.995	
Flt Protected	0.950			0.997		
Satd. Flow (prot)	1770	1583	0	3529	1853	0
Flt Permitted	0.950			0.652		
Satd. Flow (perm)	1770	1583	0	2308	1853	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		147			4	
Link Speed (mph)	30			40	40	
Link Distance (ft)	745			2535	1141	
Travel Time (s)	16.9			43.2	19.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	147	71	1228	1038	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	147	0	1299	1076	0
Turn Type	Prot	Perm	D.P+P	NA	NA	
Protected Phases	4		1	1 2	2	
Permitted Phases		4	2			
Detector Phase	4	4	1	1 2	2	
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		15.0	
Minimum Split (s)	30.0	30.0	8.0		24.8	
Total Split (s)	18.0	18.0	8.0		34.0	
Total Split (%)	30.0%	30.0%	13.3%		56.7%	
Maximum Green (s)	14.0	14.0	4.0		27.2	
Yellow Time (s)	3.0	3.0	3.0		4.4	
All-Red Time (s)	1.0	1.0	1.0		2.4	
Lost Time Adjust (s)	0.0	0.0			0.0	
Total Lost Time (s)	4.0	4.0			6.8	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	None	None	Max		C-Max	
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	7.7	7.7		42.5	27.2	
Actuated g/C Ratio	0.13	0.13		0.71	0.45	
v/c Ratio	0.17	0.44		0.69	1.28	
Control Delay	24.5	9.5		6.7	139.3	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	24.5	9.5		6.7	139.3	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
LOS	C	A		A	F	
Approach Delay	12.6			6.7	139.3	
Approach LOS	B			A	F	
Queue Length 50th (ft)	13	0		67	~495	
Queue Length 95th (ft)	34	41		127	m#386	
Internal Link Dist (ft)	665			2455	1061	
Turn Bay Length (ft)		100				
Base Capacity (vph)	413	482		1886	842	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.09	0.30		0.69	1.28	

Intersection Summary

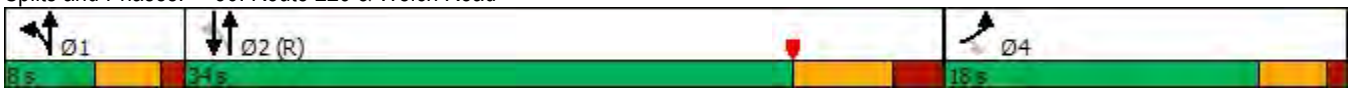
Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 44 (73%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.28
Intersection Signal Delay: 62.8 Intersection LOS: E
Intersection Capacity Utilization 92.3% ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 36: Route 229 & Welch Road

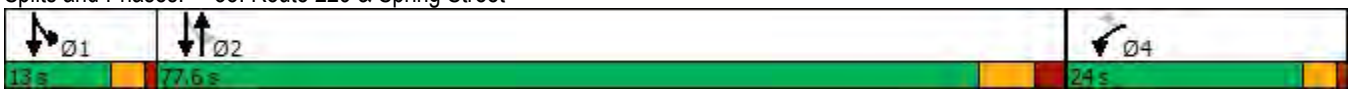


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	35	30	1100	35	85	1010
Future Volume (vph)	35	30	1100	35	85	1010
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		7%			0%
Storage Length (ft)	0	95		0	205	
Storage Lanes	1	1		0	1	
Taper Length (ft)	100				180	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt		0.850	0.995			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3398	0	1770	1863
Flt Permitted	0.950				0.190	
Satd. Flow (perm)	1770	1583	3398	0	354	1863
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		33	5			
Link Speed (mph)	30		40			40
Link Distance (ft)	911		3080			2535
Travel Time (s)	20.7		52.5			43.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	33	1196	38	92	1098
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	33	1234	0	92	1098
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	4		2		1	1 2
Permitted Phases		4			1 2	
Detector Phase	4	4	2		1	1 2
Switch Phase						
Minimum Initial (s)	9.0	9.0	25.0		5.0	
Minimum Split (s)	20.0	20.0	32.6		9.0	
Total Split (s)	24.0	24.0	77.6		13.0	
Total Split (%)	20.9%	20.9%	67.7%		11.3%	
Maximum Green (s)	20.0	20.0	70.0		9.0	
Yellow Time (s)	3.0	3.0	4.9		3.0	
All-Red Time (s)	1.0	1.0	2.7		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0	7.6		4.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	4.0		2.0	
Recall Mode	None	None	Min		Min	
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	9.6	9.6	64.6		77.7	83.0
Actuated g/C Ratio	0.10	0.10	0.67		0.81	0.87
v/c Ratio	0.22	0.18	0.54		0.22	0.68
Control Delay	47.3	17.3	9.3		2.9	5.9
Queue Delay	0.0	0.0	0.0		0.0	0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	47.3	17.3	9.3		2.9	5.9
LOS	D	B	A		A	A
Approach Delay	33.3		9.3			5.6
Approach LOS	C		A			A
Queue Length 50th (ft)	24	0	194		7	206
Queue Length 95th (ft)	56	29	254		16	343
Internal Link Dist (ft)	831		3000			2455
Turn Bay Length (ft)		95			205	
Base Capacity (vph)	384	369	2512		425	1615
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.10	0.09	0.49		0.22	0.68

Intersection Summary	
Area Type: Other	
Cycle Length: 114.6	
Actuated Cycle Length: 95.8	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 8.2	Intersection LOS: A
Intersection Capacity Utilization 67.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 38: Route 229 & Spring Street



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	15	30	1055	35	85	980
Future Volume (vph)	15	30	1055	35	85	980
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	12	12	12	12
Grade (%)	0%		0%			7%
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.909		0.995			
Flt Protected	0.984					0.996
Satd. Flow (prot)	1777	0	3522	0	0	1790
Flt Permitted	0.984					0.812
Satd. Flow (perm)	1777	0	3522	0	0	1460
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	33		8			
Link Speed (mph)	30		40			40
Link Distance (ft)	335		424			3080
Travel Time (s)	7.6		7.2			52.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	33	1147	38	92	1065
Shared Lane Traffic (%)						
Lane Group Flow (vph)	49	0	1185	0	0	1157
Turn Type	Prot		NA		Perm	NA
Protected Phases	4		2			2
Permitted Phases					2	
Detector Phase	4		2		2	2
Switch Phase						
Minimum Initial (s)	9.0		15.0		15.0	15.0
Minimum Split (s)	23.0		21.3		21.3	21.3
Total Split (s)	24.0		46.3		46.3	46.3
Total Split (%)	34.1%		65.9%		65.9%	65.9%
Maximum Green (s)	20.0		40.0		40.0	40.0
Yellow Time (s)	3.0		4.6		4.6	4.6
All-Red Time (s)	1.0		1.7		1.7	1.7
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	4.0		6.3			6.3
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.5		2.5		2.5	2.5
Recall Mode	None		Min		Min	Min
Walk Time (s)	18.0					
Flash Dont Walk (s)	1.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	9.1		55.2			55.2
Actuated g/C Ratio	0.14		0.83			0.83
v/c Ratio	0.18		0.40			0.95
Control Delay	15.4		3.4			29.9
Queue Delay	0.0		0.2			0.0
Total Delay	15.4		3.6			29.9
LOS	B		A			C

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Approach Delay	15.4		3.6			29.9
Approach LOS	B		A			C
Queue Length 50th (ft)	7		86			~602
Queue Length 95th (ft)	31		120			#741
Internal Link Dist (ft)	255		344			3000
Turn Bay Length (ft)						
Base Capacity (vph)	563		2933			1215
Starvation Cap Reductn	0		766			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.09		0.55			0.95

Intersection Summary	
Area Type: Other	
Cycle Length: 70.3	
Actuated Cycle Length: 66.3	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 16.6	Intersection LOS: B
Intersection Capacity Utilization 107.9%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 41: Route 229 & Curtiss Street

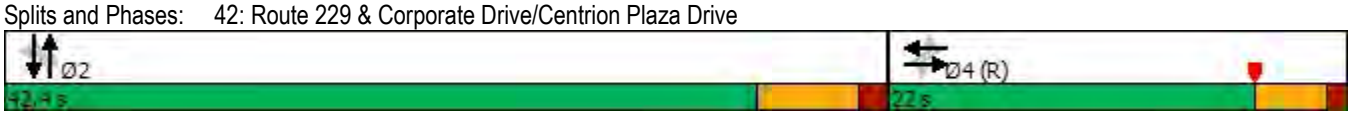
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	5	60	5	0	10	90	1035	5	5	945	130
Future Volume (vph)	45	5	60	5	0	10	90	1035	5	5	945	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	65		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.926			0.907			0.999			0.982	
Flt Protected		0.980			0.985		0.950			0.950		
Satd. Flow (prot)	0	1690	0	0	1664	0	1770	3536	0	1770	1829	0
Flt Permitted		0.859			0.927		0.093			0.235		
Satd. Flow (perm)	0	1482	0	0	1566	0	173	3536	0	438	1829	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		65			58			1			17	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		287			281			412			424	
Travel Time (s)		6.5			6.4			7.0			7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	5	65	5	0	11	98	1125	5	5	1027	141
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	119	0	0	16	0	98	1130	0	5	1168	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	17.5	17.5		17.5	17.5		21.4	21.4		21.4	21.4	
Total Split (s)	22.0	22.0		22.0	22.0		42.4	42.4		42.4	42.4	
Total Split (%)	34.2%	34.2%		34.2%	34.2%		65.8%	65.8%		65.8%	65.8%	
Maximum Green (s)	17.5	17.5		17.5	17.5		36.0	36.0		36.0	36.0	
Yellow Time (s)	3.4	3.4		3.4	3.4		4.9	4.9		4.9	4.9	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		6.4	6.4		6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Recall Mode	C-Min	C-Min		C-Min	C-Min		Max	Max		Max	Max	
Walk Time (s)	12.0	12.0		12.0	12.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		8.2			8.2		45.3	45.3		45.3	45.3	
Actuated g/C Ratio		0.13			0.13		0.70	0.70		0.70	0.70	
v/c Ratio		0.49			0.06		0.81	0.45		0.02	0.90	
Control Delay		20.5			0.5		60.8	5.1		3.6	21.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	23.9	
Total Delay		20.5			0.5		60.8	5.1		3.6	45.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		C			A		E	A		A	D	
Approach Delay		20.5			0.5			9.5			44.8	
Approach LOS		C			A			A			D	
Queue Length 50th (ft)		20			0		19	72		0	262	
Queue Length 95th (ft)		60			0		#75	135		4	#698	
Internal Link Dist (ft)		207			201			332			344	
Turn Bay Length (ft)							100			65		
Base Capacity (vph)		450			467		121	2488		308	1292	
Starvation Cap Reductn		0			0		0	0		0	172	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.26			0.03		0.81	0.45		0.02	1.04	

Intersection Summary

Area Type: Other
Cycle Length: 64.4
Actuated Cycle Length: 64.4
Offset: 49 (76%), Referenced to phase 4:EBWB, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 26.3 Intersection LOS: C
Intersection Capacity Utilization 93.1% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 42: Route 229 & Corporate Drive/Centrion Plaza Drive



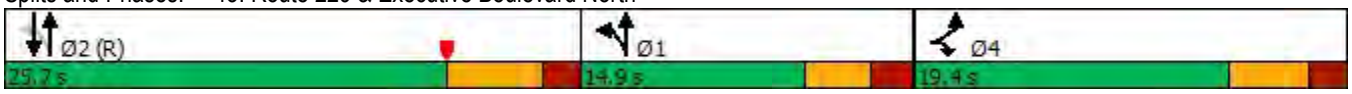
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	15	100	1110	1010	45
Future Volume (vph)	10	15	100	1110	1010	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	360	220			240
Storage Lanes	1	1	1			1
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.994	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3518	0
Flt Permitted	0.950		0.183			
Satd. Flow (perm)	1770	1583	341	3539	3518	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		16			8	
Link Speed (mph)	30			40	40	
Link Distance (ft)	694			570	291	
Travel Time (s)	15.8			9.7	5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	16	109	1207	1098	49
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	16	109	1207	1147	0
Turn Type	Prot	Prot	pm+pt	NA	NA	
Protected Phases	4	4	1	1 2	2	
Permitted Phases			1 2			
Detector Phase	4	4	1	1 2	2	
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		15.0	
Minimum Split (s)	12.4	12.4	8.9		21.0	
Total Split (s)	19.4	19.4	14.9		25.7	
Total Split (%)	32.3%	32.3%	24.8%		42.8%	
Maximum Green (s)	14.0	14.0	10.0		19.7	
Yellow Time (s)	3.6	3.6	3.0		4.3	
All-Red Time (s)	1.8	1.8	1.9		1.7	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.4	5.4	4.9		6.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.5	2.5	2.0		0.2	
Recall Mode	None	None	None		C-Max	
Walk Time (s)	24.0	24.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	7.0	7.0	45.2	53.1	35.0	
Actuated g/C Ratio	0.12	0.12	0.75	0.88	0.58	
v/c Ratio	0.05	0.08	0.23	0.39	0.56	
Control Delay	24.3	13.7	5.3	2.4	10.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	24.3	13.7	5.3	2.4	10.8	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
LOS	C	B	A	A	B	
Approach Delay	18.0			2.6	10.8	
Approach LOS	B			A	B	
Queue Length 50th (ft)	4	0	0	0	92	
Queue Length 95th (ft)	16	15	20	106	236	
Internal Link Dist (ft)	614			490	211	
Turn Bay Length (ft)		360	220			
Base Capacity (vph)	413	381	500	3067	2056	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.03	0.04	0.22	0.39	0.56	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 59 (98%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 6.5 Intersection LOS: A
Intersection Capacity Utilization 54.3% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 43: Route 229 & Executive Boulevard North



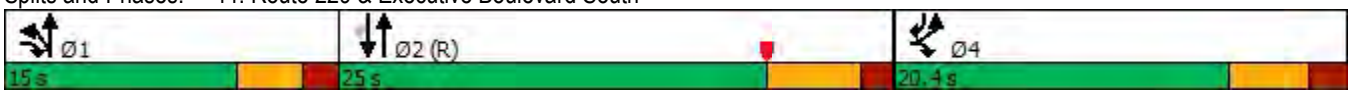
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	55	100	365	1155	870	200
Future Volume (vph)	55	100	365	1155	870	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			5%	0%	
Storage Length (ft)	860	370	335			250
Storage Lanes	1	1	2			1
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	0.88	0.97	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	2787	3347	3451	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	2787	3347	3451	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		33				49
Link Speed (mph)	30			40	40	
Link Distance (ft)	945			579	570	
Travel Time (s)	21.5			9.9	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	109	397	1255	946	217
Shared Lane Traffic (%)						
Lane Group Flow (vph)	60	109	397	1255	946	217
Turn Type	Prot	pt+ov	Prot	NA	NA	pm+ov
Protected Phases	4	1 4	1	1 2	2	4
Permitted Phases		1 4				2
Detector Phase	4	1 4	1	1 2	2	4
Switch Phase						
Minimum Initial (s)	7.0		4.0		15.0	7.0
Minimum Split (s)	12.4		8.6		20.8	12.4
Total Split (s)	20.4		15.0		25.0	20.4
Total Split (%)	33.8%		24.8%		41.4%	33.8%
Maximum Green (s)	15.0		10.4		19.2	15.0
Yellow Time (s)	3.6		3.0		4.3	3.6
All-Red Time (s)	1.8		1.6		1.5	1.8
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.4		4.6		5.8	5.4
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.5		2.0		0.2	2.5
Recall Mode	None		None		C-Max	None
Walk Time (s)	22.0					22.0
Flash Dont Walk (s)	1.0					1.0
Pedestrian Calls (#/hr)	0					0
Act Effct Green (s)	7.7	29.4	16.3	42.7	20.6	34.1
Actuated g/C Ratio	0.13	0.49	0.27	0.71	0.34	0.56
v/c Ratio	0.27	0.08	0.44	0.51	0.79	0.24
Control Delay	26.6	5.8	19.8	5.1	24.8	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Delay	26.6	5.8	19.8	5.1	24.8	6.1
LOS	C	A	B	A	C	A
Approach Delay	13.2			8.7	21.3	
Approach LOS	B			A	C	
Queue Length 50th (ft)	20	7	58	79	166	29
Queue Length 95th (ft)	48	18	97	137	#264	54
Internal Link Dist (ft)	865			499	490	
Turn Bay Length (ft)	860	370	335			250
Base Capacity (vph)	439	1375	905	2439	1204	1099
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.08	0.44	0.51	0.79	0.20

Intersection Summary	
Area Type: Other	
Cycle Length: 60.4	
Actuated Cycle Length: 60.4	
Offset: 21 (35%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 13.9	Intersection LOS: B
Intersection Capacity Utilization 53.5%	ICU Level of Service A
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 44: Route 229 & Executive Boulevard South



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	145	0	220	45	1245	0	0	265	705
Future Volume (vph)	0	0	0	145	0	220	45	1245	0	0	265	705
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			5%	
Storage Length (ft)	0		0	240		440	90		0	0		250
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			100			100			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950	0.950		0.950					
Satd. Flow (prot)	0	0	0	1681	1681	1583	1770	3539	0	0	3451	1544
Flt Permitted				0.950	0.950		0.575					
Satd. Flow (perm)	0	0	0	1681	1681	1583	1071	3539	0	0	3451	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						131						766
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		337			747			508			579	
Travel Time (s)		7.7			17.0			8.7			9.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	158	0	239	49	1353	0	0	288	766
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	0	0	79	79	239	49	1353	0	0	288	766
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					4		1	1 2			2	
Permitted Phases				4		4	1 2					2
Detector Phase				4	4	4	1	1 2			2	2
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0	5.0				15.0	15.0
Minimum Split (s)				12.7	12.7	12.7	9.0				21.2	21.2
Total Split (s)				20.7	20.7	20.7	11.0				28.3	28.3
Total Split (%)				34.5%	34.5%	34.5%	18.3%				47.2%	47.2%
Maximum Green (s)				15.0	15.0	15.0	7.0				22.1	22.1
Yellow Time (s)				3.0	3.0	3.0	3.0				4.3	4.3
All-Red Time (s)				2.7	2.7	2.7	1.0				1.9	1.9
Lost Time Adjust (s)				0.0	0.0	0.0	0.0				0.0	0.0
Total Lost Time (s)				5.7	5.7	5.7	4.0				6.2	6.2
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)				2.0	2.0	2.0	2.0				0.2	0.2
Recall Mode				None	None	None	None				C-Max	C-Max
Act Effct Green (s)				9.8	9.8	9.8	36.5	40.5			22.5	22.5
Actuated g/C Ratio				0.16	0.16	0.16	0.61	0.68			0.38	0.38
v/c Ratio				0.29	0.29	0.65	0.06	0.57			0.22	0.72
Control Delay				23.4	23.4	19.3	4.6	6.9			13.5	6.1
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				23.4	23.4	19.3	4.6	6.9			13.5	6.1
LOS				C	C	B	A	A			B	A
Approach Delay					20.9			6.9			8.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS					C			A			A	
Queue Length 50th (ft)				27	27	36	4	100			36	0
Queue Length 95th (ft)				54	54	87	17	209			61	63
Internal Link Dist (ft)		257			667			428			499	
Turn Bay Length (ft)				240		440	90					250
Base Capacity (vph)				420	420	494	787	2386			1295	1057
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.19	0.19	0.48	0.06	0.57			0.22	0.72

Intersection Summary

Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 20 (33%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 9.3	Intersection LOS: A
Intersection Capacity Utilization 66.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 45: Route 229 & I-84 WB On Ramp/I-84 WB Off Ramp

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	735	35	260	715	5	275	0	255	5	20	5
Future Volume (vph)	0	735	35	260	715	5	275	0	255	5	20	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		150	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.993			0.999				0.850		0.979	
Flt Protected					0.987		0.950	0.950			0.992	
Satd. Flow (prot)	0	3514	0	0	3490	0	1681	1681	1583	0	1809	0
Flt Permitted					0.575		0.950	0.950			0.992	
Satd. Flow (perm)	0	3514	0	0	2033	0	1681	1681	1583	0	1809	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			1				190		5	
Link Speed (mph)		35			35			35			30	
Link Distance (ft)		363			299			709			169	
Travel Time (s)		7.1			5.8			13.8			3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	799	38	283	777	5	299	0	277	5	22	5
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	837	0	0	1065	0	149	150	277	0	32	0
Turn Type		NA		D.P+P	NA		Split	NA	pm+ov	Split	NA	
Protected Phases		2		1	1 2		5	5	1	4	4	
Permitted Phases	2			2					5			
Detector Phase	2	2		1	1 2		5	5	1	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		7.0			9.0	9.0	7.0	5.0	5.0	
Minimum Split (s)	22.4	22.4		11.0			13.0	13.0	11.0	24.3	24.3	
Total Split (s)	54.0	54.0		10.0			25.0	25.0	10.0	11.0	11.0	
Total Split (%)	54.0%	54.0%		10.0%			25.0%	25.0%	10.0%	11.0%	11.0%	
Maximum Green (s)	46.6	46.6		6.0			21.0	21.0	6.0	4.7	4.7	
Yellow Time (s)	4.4	4.4		3.0			3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		1.0			1.0	1.0	1.0	3.3	3.3	
Lost Time Adjust (s)		0.0					0.0	0.0	0.0		0.0	
Total Lost Time (s)		7.4					4.0	4.0	4.0		6.3	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2		0.2			3.0	3.0	0.2	1.5	1.5	
Recall Mode	C-Max	C-Max		Min			Min	Min	Min	None	None	
Walk Time (s)										17.0	17.0	
Flash Dont Walk (s)										1.0	1.0	
Pedestrian Calls (#/hr)										0	0	
Act Effct Green (s)		53.4			66.4		14.2	14.2	25.4		5.6	
Actuated g/C Ratio		0.53			0.66		0.14	0.14	0.25		0.06	
v/c Ratio		0.45			0.71		0.62	0.63	0.51		0.30	
Control Delay		16.6			14.2		51.3	51.6	10.6		47.4	
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0	
Total Delay		16.6			14.2		51.3	51.6	10.6		47.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		B			B		D	D	B		D	
Approach Delay		16.6			14.2			31.8			47.4	
Approach LOS		B			B			C			D	
Queue Length 50th (ft)		188			156		95	95	33		17	
Queue Length 95th (ft)		244			#253		153	155	89		47	
Internal Link Dist (ft)		283			219			629			89	
Turn Bay Length (ft)							150		150			
Base Capacity (vph)		1879			1490		353	353	544		105	
Starvation Cap Reductn		0			0		0	0	0		0	
Spillback Cap Reductn		0			0		0	0	0		0	
Storage Cap Reductn		0			0		0	0	0		0	
Reduced v/c Ratio		0.45			0.71		0.42	0.42	0.51		0.30	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 54 (54%), Referenced to phase 2:EBWB, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 19.4 Intersection LOS: B
Intersection Capacity Utilization 76.0% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Route 229/Driveway & Route 6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	25	35	80	35	50	55	530	85	30	485	10
Future Volume (vph)	5	25	35	80	35	50	55	530	85	30	485	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.927			0.959			0.983			0.997	
Flt Protected		0.996			0.976			0.996			0.997	
Satd. Flow (prot)	0	1720	0	0	1743	0	0	1824	0	0	1852	0
Flt Permitted		0.976			0.844			0.922			0.942	
Satd. Flow (perm)	0	1685	0	0	1508	0	0	1688	0	0	1749	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			31			10			1	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		859			830			899			709	
Travel Time (s)		19.5			18.9			17.5			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	27	38	87	38	54	60	576	92	33	527	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	70	0	0	179	0	0	728	0	0	571	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	9.0	9.0		9.0	9.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	13.4	13.4		13.4	13.4		25.3	25.3		25.3	25.3	
Total Split (s)	24.4	24.4		24.4	24.4		25.6	25.6		25.6	25.6	
Total Split (%)	34.9%	34.9%		34.9%	34.9%		36.6%	36.6%		36.6%	36.6%	
Maximum Green (s)	20.0	20.0		20.0	20.0		20.3	20.3		20.3	20.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.8	3.8		3.8	3.8	
All-Red Time (s)	1.4	1.4		1.4	1.4		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.4			4.4			5.3			5.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		12.9			12.9			47.4			47.4	
Actuated g/C Ratio		0.18			0.18			0.68			0.68	
v/c Ratio		0.21			0.59			0.63			0.48	
Control Delay		13.9			29.1			14.7			7.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		13.9			29.1			14.7			7.8	
LOS		B			C			B			A	
Approach Delay		13.9			29.1			14.7			7.8	
Approach LOS		B			C			B			A	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	29%
Maximum Green (s)	16.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	9.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		12			59			239			95	
Queue Length 95th (ft)		39			107			379			207	
Internal Link Dist (ft)		779			750			819			629	
Turn Bay Length (ft)												
Base Capacity (vph)		508			453			1147			1185	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.14			0.40			0.63			0.48	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 45.7 (65%), Referenced to phase 2:NBSB and 6:, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 13.8	Intersection LOS: B
Intersection Capacity Utilization 75.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Route 229 & Moody St/Louisianna Ave

Lane Group	Ø3
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

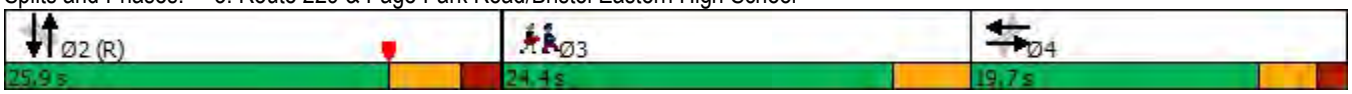
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	5	10	30	0	10	35	640	15	5	570	25
Future Volume (vph)	20	5	10	30	0	10	35	640	15	5	570	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.961			0.966			0.997			0.994	
Flt Protected		0.972			0.964			0.997				
Satd. Flow (prot)	0	1740	0	0	1735	0	0	1852	0	0	1852	0
Flt Permitted		0.796			0.755			0.952			0.996	
Satd. Flow (perm)	0	1425	0	0	1359	0	0	1768	0	0	1844	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			108			2			3	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		480			517			662			899	
Travel Time (s)		10.9			11.8			12.9			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	5	11	33	0	11	38	696	16	5	620	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	38	0	0	44	0	0	750	0	0	652	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	14.7	14.7		14.7	14.7		25.9	25.9		25.9	25.9	
Total Split (s)	19.7	19.7		19.7	19.7		25.9	25.9		25.9	25.9	
Total Split (%)	28.1%	28.1%		28.1%	28.1%		37.0%	37.0%		37.0%	37.0%	
Maximum Green (s)	15.0	15.0		15.0	15.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.8	3.8		3.8	3.8	
All-Red Time (s)	1.7	1.7		1.7	1.7		2.1	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.7			4.7			5.9			5.9	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		10.0			10.0			57.6			57.6	
Actuated g/C Ratio		0.14			0.14			0.82			0.82	
v/c Ratio		0.18			0.15			0.52			0.43	
Control Delay		23.0			1.1			3.8			4.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		23.0			1.1			3.8			4.0	
LOS		C			A			A			A	
Approach Delay		23.0			1.1			3.8			4.0	
Approach LOS		C			A			A			A	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	22.0
Total Split (s)	24.4
Total Split (%)	35%
Maximum Green (s)	20.4
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		10			0			102			157	
Queue Length 95th (ft)		36			1			117			51	
Internal Link Dist (ft)		400			437			582			819	
Turn Bay Length (ft)												
Base Capacity (vph)		314			376			1456			1519	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.12			0.12			0.52			0.43	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 1 (1%), Referenced to phase 2:NBSB and 6:, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 4.3	Intersection LOS: A
Intersection Capacity Utilization 74.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Route 229 & Page Park Road/Bristol Eastern High School



Lane Group	Ø3
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	NBL	NBT	SBT	SBR	NEL	NER	Ø3
Lane Configurations							
Traffic Volume (vph)	5	605	530	85	105	25	
Future Volume (vph)	5	605	530	85	105	25	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.981		0.974		
Flt Protected					0.961		
Satd. Flow (prot)	0	1863	1827	0	1744	0	
Flt Permitted		0.996			0.961		
Satd. Flow (perm)	0	1855	1827	0	1744	0	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			12		17		
Link Speed (mph)		35	35		30		
Link Distance (ft)		1271	662		359		
Travel Time (s)		24.8	12.9		8.2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	5	658	576	92	114	27	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	663	668	0	141	0	
Turn Type	Perm	NA	NA		Prot		
Protected Phases		2	2		4		3
Permitted Phases	2						
Detector Phase	2	2	2		4		
Switch Phase							
Minimum Initial (s)	20.0	20.0	20.0		10.0		1.0
Minimum Split (s)	25.0	25.0	25.0		24.5		22.5
Total Split (s)	25.0	25.0	25.0		24.0		21.0
Total Split (%)	35.7%	35.7%	35.7%		34.3%		30%
Maximum Green (s)	20.0	20.0	20.0		20.0		19.0
Yellow Time (s)	4.0	4.0	4.0		3.0		2.0
All-Red Time (s)	1.0	1.0	1.0		1.0		0.0
Lost Time Adjust (s)		0.0	0.0		0.0		
Total Lost Time (s)		5.0	5.0		4.0		
Lead/Lag					Lag		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	5.0	5.0	5.0		3.0		0.2
Recall Mode	C-Min	C-Min	C-Min		None		None
Walk Time (s)							7.0
Flash Dont Walk (s)							10.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)		53.4	53.4		11.4		
Actuated g/C Ratio		0.76	0.76		0.16		
v/c Ratio		0.47	0.48		0.47		
Control Delay		5.9	2.8		28.4		
Queue Delay		0.0	0.0		0.0		
Total Delay		5.9	2.8		28.4		
LOS		A	A		C		
Approach Delay		5.9	2.8		28.4		
Approach LOS		A	A		C		

Lane Group	NBL	NBT	SBT	SBR	NEL	NER	Ø3
Queue Length 50th (ft)		96	39		50		
Queue Length 95th (ft)		200	51		94		
Internal Link Dist (ft)		1191	582		279		
Turn Bay Length (ft)							
Base Capacity (vph)		1415	1396		510		
Starvation Cap Reductn		0	0		0		
Spillback Cap Reductn		0	0		0		
Storage Cap Reductn		0	0		0		
Reduced v/c Ratio		0.47	0.48		0.28		

Intersection Summary	
Area Type: Other	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 2 (3%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.48	
Intersection Signal Delay: 6.7	Intersection LOS: A
Intersection Capacity Utilization 51.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Woodland Street & Route 229

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations							
Traffic Volume (vph)	110	130	550	40	120	515	
Future Volume (vph)	110	130	550	40	120	515	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0		0	160		
Storage Lanes	1	0		0	1		
Taper Length (ft)	25				100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	0.927		0.991				
Flt Protected	0.978				0.950		
Satd. Flow (prot)	1689	0	1846	0	1770	1863	
Flt Permitted	0.978				0.950		
Satd. Flow (perm)	1689	0	1846	0	1770	1863	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)	48		4				
Link Speed (mph)	30		35			35	
Link Distance (ft)	835		2121			1598	
Travel Time (s)	19.0		41.3			31.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	120	141	598	43	130	560	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	261	0	641	0	130	560	
Turn Type	Prot		NA		Prot	NA	
Protected Phases	4		2		1	1 2	3
Permitted Phases							
Detector Phase	4		2		1	1 2	
Switch Phase							
Minimum Initial (s)	9.0		15.0		5.0		1.0
Minimum Split (s)	22.0		20.9		9.0		21.0
Total Split (s)	34.0		55.0		9.0		21.0
Total Split (%)	28.6%		46.2%		7.6%		18%
Maximum Green (s)	30.0		49.1		5.0		17.0
Yellow Time (s)	3.0		4.0		3.0		4.0
All-Red Time (s)	1.0		1.9		1.0		0.0
Lost Time Adjust (s)	0.0		0.0		0.0		
Total Lost Time (s)	4.0		5.9		4.0		
Lead/Lag	Lag		Lag		Lead		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0		4.0		1.0		0.2
Recall Mode	None		Min		None		None
Walk Time (s)							7.0
Flash Dont Walk (s)							10.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	14.9		36.8		5.2	48.2	
Actuated g/C Ratio	0.21		0.52		0.07	0.68	
v/c Ratio	0.67		0.67		1.01	0.45	
Control Delay	32.0		17.0		123.9	7.1	
Queue Delay	0.0		0.0		0.0	0.0	
Total Delay	32.0		17.0		123.9	7.1	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
LOS	C		B		F	A	
Approach Delay	32.0		17.0			29.1	
Approach LOS	C		B			C	
Queue Length 50th (ft)	86		189		~64	95	
Queue Length 95th (ft)	186		351		#209	198	
Internal Link Dist (ft)	755		2041			1518	
Turn Bay Length (ft)					160		
Base Capacity (vph)	769		1328		129	1563	
Starvation Cap Reductn	0		0		0	0	
Spillback Cap Reductn	0		0		0	0	
Storage Cap Reductn	0		0		0	0	
Reduced v/c Ratio	0.34		0.48		1.01	0.36	

Intersection Summary

Area Type: Other
Cycle Length: 119
Actuated Cycle Length: 71.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 24.7 Intersection LOS: C
Intersection Capacity Utilization 63.7% ICU Level of Service B
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Route 229 & West Washington Street

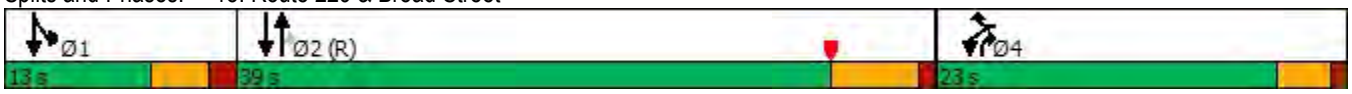
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	195	95	485	175	60	515
Future Volume (vph)	195	95	485	175	60	515
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	490	325		130	220	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	1583	3539	1583	1770	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		103		190		
Link Speed (mph)	30		30			30
Link Distance (ft)	911		424			459
Travel Time (s)	20.7		9.6			10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	212	103	527	190	65	560
Shared Lane Traffic (%)						
Lane Group Flow (vph)	212	103	527	190	65	560
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4	2	4	1	1 2
Permitted Phases				2		
Detector Phase	4	4	2	4	1	1 2
Switch Phase						
Minimum Initial (s)	6.0	6.0	15.0	6.0	6.0	
Minimum Split (s)	25.0	25.0	20.9	25.0	10.9	
Total Split (s)	23.0	23.0	39.0	23.0	13.0	
Total Split (%)	30.7%	30.7%	52.0%	30.7%	17.3%	
Maximum Green (s)	19.0	19.0	33.1	19.0	8.1	
Yellow Time (s)	3.0	3.0	4.9	3.0	3.3	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	5.9	4.0	4.9	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	3.0	2.0	3.0	
Recall Mode	None	None	C-Min	None	None	
Walk Time (s)	1.0	1.0		1.0		
Flash Dont Walk (s)	20.0	20.0		20.0		
Pedestrian Calls (#/hr)	0	0		0		
Act Effct Green (s)	9.0	9.0	40.6	55.5	10.6	57.1
Actuated g/C Ratio	0.12	0.12	0.54	0.74	0.14	0.76
v/c Ratio	0.51	0.37	0.28	0.16	0.26	0.21
Control Delay	35.1	10.7	18.9	0.7	30.1	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.1	10.7	18.9	0.7	30.1	2.9

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS	D	B	B	A	C	A
Approach Delay	27.1		14.1			5.8
Approach LOS	C		B			A
Queue Length 50th (ft)	48	0	95	0	28	28
Queue Length 95th (ft)	77	40	125	1	57	51
Internal Link Dist (ft)	831		344			379
Turn Bay Length (ft)	490	325		130	220	
Base Capacity (vph)	869	477	1916	1406	254	2656
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.22	0.28	0.14	0.26	0.21

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 41 (55%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 13.4 Intersection LOS: B
Intersection Capacity Utilization 36.3% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 18: Route 229 & Broad Street



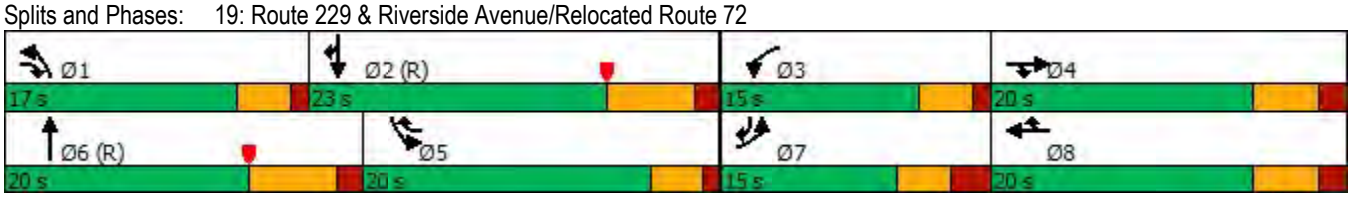
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	370	240	20	365	90	210	395	50	105	395	215
Future Volume (vph)	165	370	240	20	365	90	210	395	50	105	395	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	525		765	65		300	525		0	200		275
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	150			135			90			75		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	1770	3539	1583	1770	3479	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1863	1583	1770	3539	1583	1770	3479	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			261			98		16				129
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		918			774			907			424	
Travel Time (s)		20.9			17.6			20.6			9.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	402	261	22	397	98	228	429	54	114	429	234
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	402	261	22	397	98	228	483	0	114	429	234
Turn Type	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA		Prot	NA	pt+ov
Protected Phases	7	4	4 1	3	8	5 8	1	6		5	2	2 7
Permitted Phases												
Detector Phase	7	4	4 1	3	8	5 8	1	6		5	2	2 7
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	15.0		6.0	15.0	
Minimum Split (s)	11.2	28.4		10.0	28.4		10.0	21.4		10.0	21.4	
Total Split (s)	15.0	20.0		15.0	20.0		17.0	20.0		20.0	23.0	
Total Split (%)	20.0%	26.7%		20.0%	26.7%		22.7%	26.7%		26.7%	30.7%	
Maximum Green (s)	9.8	14.6		11.0	14.6		13.0	13.6		16.0	16.6	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	4.9		3.0	4.9	
All-Red Time (s)	2.2	1.7		1.0	1.7		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.4		4.0	5.4		4.0	6.4		4.0	6.4	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		22.0			22.0							
Flash Dont Walk (s)		1.0			1.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	8.1	23.0	39.8	6.2	13.9	28.8	12.9	20.5		13.5	19.1	32.4
Actuated g/C Ratio	0.11	0.31	0.53	0.08	0.19	0.38	0.17	0.27		0.18	0.25	0.43
v/c Ratio	0.48	0.71	0.27	0.15	0.61	0.15	0.75	0.50		0.36	0.48	0.31
Control Delay	35.6	33.2	2.4	34.2	32.5	2.1	46.7	27.1		28.8	27.4	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	35.6	33.2	2.4	34.2	32.5	2.1	46.7	27.1		28.8	27.4	6.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	C	A	C	C	A	D	C		C	C	A
Approach Delay		24.2			26.8			33.4			21.4	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	41	154	0	10	92	0	97	100		33	82	11
Queue Length 95th (ft)	69	#334	36	30	133	12	#204	#166		87	145	74
Internal Link Dist (ft)		838			694			827			344	
Turn Bay Length (ft)	525		765	65		300	525			200		275
Base Capacity (vph)	448	570	974	259	700	736	318	960		377	902	790
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.40	0.71	0.27	0.08	0.57	0.13	0.72	0.50		0.30	0.48	0.30

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 34 (45%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 26.2 Intersection LOS: C
Intersection Capacity Utilization 65.1% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 19: Route 229 & Riverside Avenue/Relocated Route 72



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	360	225	125	285	45	225	560	135	90	550	60
Future Volume (vph)	55	360	225	125	285	45	225	560	135	90	550	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	240		240	400		0	145		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	150			150			70			90		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.942			0.980			0.971			0.985	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3334	0	1770	3468	0	1770	3437	0	1770	3486	0
Flt Permitted	0.537			0.185			0.290			0.365		
Satd. Flow (perm)	1000	3334	0	345	3468	0	540	3437	0	680	3486	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		98			13			25			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		669			802			666			907	
Travel Time (s)		15.2			18.2			15.1			20.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	391	245	136	310	49	245	609	147	98	598	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	636	0	136	359	0	245	756	0	98	663	0
Turn Type	pm+pt	NA		pm+pt	NA		D.P+P	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1 2	2 5		1	5	
Permitted Phases	4			8			5			5		
Detector Phase	7	4		3	8		1 2	2 5		1	5	
Switch Phase												
Minimum Initial (s)	4.0	7.0		4.0	7.0					4.0	15.0	
Minimum Split (s)	8.2	13.0		8.0	13.0					8.0	22.3	
Total Split (s)	10.0	18.0		10.0	22.0					10.0	25.0	
Total Split (%)	8.6%	15.5%		8.6%	19.0%					8.6%	21.6%	
Maximum Green (s)	5.8	12.0		6.0	16.0					6.0	17.7	
Yellow Time (s)	3.2	3.8		3.0	3.8					3.0	4.9	
All-Red Time (s)	1.0	2.2		1.0	2.2					1.0	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)	4.2	6.0		4.0	6.0					4.0	7.3	
Lead/Lag	Lead	Lag		Lead	Lag					Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0					2.0	3.0	
Recall Mode	None	None		None	None					None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	35.9	27.8		42.5	32.7		53.2	42.2		32.2	17.9	
Actuated g/C Ratio	0.31	0.24		0.37	0.28		0.46	0.36		0.28	0.15	
v/c Ratio	0.17	0.73		0.56	0.36		0.42	0.60		0.33	1.22	
Control Delay	28.5	40.8		39.0	36.0		21.4	32.2		24.7	156.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.5	40.8		39.0	36.0		21.4	32.2		24.7	156.3	

Lane Group	Ø2	Ø6
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	6
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	4.0	1.0
Minimum Split (s)	8.0	37.0
Total Split (s)	12.0	37.0
Total Split (%)	10%	32%
Maximum Green (s)	8.0	33.0
Yellow Time (s)	3.0	4.0
All-Red Time (s)	1.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	2.0	3.0
Recall Mode	Min	None
Walk Time (s)		7.0
Flash Dont Walk (s)		26.0
Pedestrian Calls (#/hr)		5
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	D		D	D		C	C		C	F	
Approach Delay		39.8			36.9			29.6			139.3	
Approach LOS		D			D			C			F	
Queue Length 50th (ft)	28	194		65	107		95	224		35	~321	
Queue Length 95th (ft)	72	#383		#185	185		202	336		88	#443	
Internal Link Dist (ft)		589			722			586			827	
Turn Bay Length (ft)	200			240			400			145		
Base Capacity (vph)	354	874		243	986		587	1265		293	543	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.17	0.73		0.56	0.36		0.42	0.60		0.33	1.22	

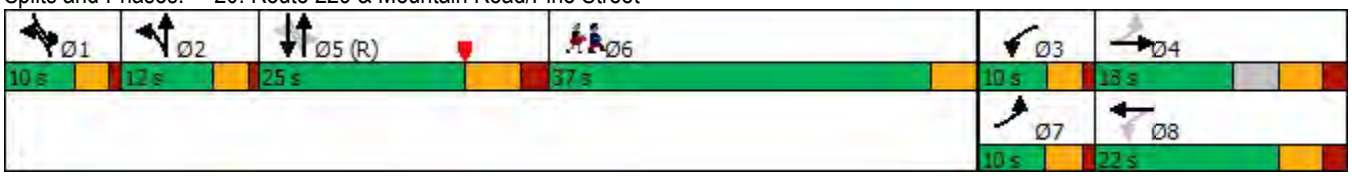
Intersection Summary

Area Type: Other
Cycle Length: 116
Actuated Cycle Length: 116
Offset: 43 (37%), Referenced to phase 5:NBSB, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.22
Intersection Signal Delay: 61.5 Intersection LOS: E
Intersection Capacity Utilization 71.4% ICU Level of Service C
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: Route 229 & Mountain Road/Pine Street



Lane Group	Ø2	Ø6
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	5	15	10	0	5	10	775	25	10	900	140
Future Volume (vph)	130	5	15	10	0	5	10	775	25	10	900	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	130		0	70		0	55		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			25			50			70		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.970			0.850			0.995			0.980	
Flt Protected	0.950	0.964		0.950			0.950			0.950		
Satd. Flow (prot)	1681	1655	0	1770	1583	0	1770	3522	0	1770	3468	0
Flt Permitted	0.950	0.964		0.950			0.202			0.296		
Satd. Flow (perm)	1681	1655	0	1770	1583	0	376	3522	0	551	3468	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			507			2			13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		650			212			757			666	
Travel Time (s)		14.8			4.8			17.2			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	5	16	11	0	5	11	842	27	11	978	152
Shared Lane Traffic (%)	42%											
Lane Group Flow (vph)	82	80	0	11	5	0	11	869	0	11	1130	0
Turn Type	Split	NA		Split	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases							6			2		
Detector Phase	4	4		8	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	11.5	11.5		10.8	10.8		9.0	21.7		9.0	21.7	
Total Split (s)	23.0	23.0		23.0	23.0		12.0	40.0		12.0	40.0	
Total Split (%)	17.8%	17.8%		17.8%	17.8%		9.3%	31.0%		9.3%	31.0%	
Maximum Green (s)	17.5	17.5		18.2	18.2		8.0	33.3		8.0	33.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	4.9		3.0	4.9	
All-Red Time (s)	2.5	2.5		1.8	1.8		1.0	1.8		1.0	1.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		4.8	4.8		4.0	6.7		4.0	6.7	
Lead/Lag	Lag	Lag					Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	10.7	10.7		6.2	6.2		97.1	93.3		96.9	91.7	
Actuated g/C Ratio	0.08	0.08		0.05	0.05		0.75	0.72		0.75	0.71	
v/c Ratio	0.59	0.56		0.13	0.01		0.03	0.34		0.02	0.46	
Control Delay	73.3	64.9		62.2	0.0		10.8	11.9		10.7	14.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	73.3	64.9		62.2	0.0		10.8	11.9		10.7	14.0	

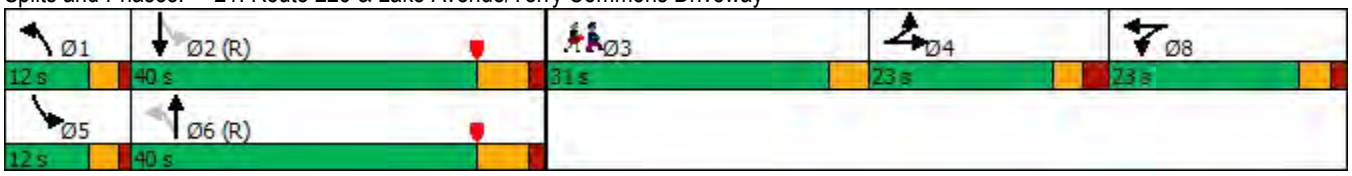
Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	24%
Maximum Green (s)	27.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	E		E	A		B	B		B	B	
Approach Delay		69.2			42.8			11.9			14.0	
Approach LOS		E			D			B			B	
Queue Length 50th (ft)	70	62		9	0		1	71		1	102	
Queue Length 95th (ft)	125	114		30	0		16	387		16	541	
Internal Link Dist (ft)		570			132			677			586	
Turn Bay Length (ft)	200			130			70			55		
Base Capacity (vph)	228	231		249	658		371	2547		492	2468	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.36	0.35		0.04	0.01		0.03	0.34		0.02	0.46	

Intersection Summary

Area Type: Other
Cycle Length: 129
Actuated Cycle Length: 129
Offset: 8 (6%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 17.4 Intersection LOS: B
Intersection Capacity Utilization 50.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 21: Route 229 & Lake Avenue/Terry Commons Driveway



Lane Group	Ø3
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	0	20	10	10	55	45	650	25	15	880	25
Future Volume (vph)	35	0	20	10	10	55	45	650	25	15	880	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		175	60		0	180		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			75			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.950				0.850		0.994			0.996	
Flt Protected		0.969			0.976		0.950			0.950		
Satd. Flow (prot)	0	1715	0	0	1818	1583	1770	3518	0	1770	3525	0
Flt Permitted		0.817			0.877		0.227			0.373		
Satd. Flow (perm)	0	1446	0	0	1634	1583	423	3518	0	695	3525	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		183				106		5			4	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		674			483			840			981	
Travel Time (s)		15.3			11.0			14.3			22.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	0	22	11	11	60	49	707	27	16	957	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	0	0	22	60	49	734	0	16	984	0
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		7			4 7		5	2		1	6	
Permitted Phases	7			4 7		4 7	2			6		
Detector Phase	7	7		4 7	4 7	4 7	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0					5.0	15.0		5.0	15.0	
Minimum Split (s)	10.8	10.8					9.0	21.1		9.0	21.1	
Total Split (s)	19.8	19.8					9.0	29.0		9.0	29.0	
Total Split (%)	27.2%	27.2%					12.3%	39.8%		12.3%	39.8%	
Maximum Green (s)	14.0	14.0					5.0	22.9		5.0	22.9	
Yellow Time (s)	3.0	3.0					3.0	4.2		3.0	4.2	
All-Red Time (s)	2.8	2.8					1.0	1.9		1.0	1.9	
Lost Time Adjust (s)		0.0					0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.8					4.0	6.1		4.0	6.1	
Lead/Lag	Lag	Lag					Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes										
Vehicle Extension (s)	2.0	2.0					2.0	0.2		2.0	0.2	
Recall Mode	None	None					None	C-Max		None	C-Max	
Walk Time (s)	24.0	24.0										
Flash Dont Walk (s)	1.0	1.0										
Pedestrian Calls (#/hr)	0	0										
Act Effct Green (s)		5.0			13.6	13.6	52.3	50.1		50.1	46.2	
Actuated g/C Ratio		0.07			0.19	0.19	0.72	0.69		0.69	0.63	
v/c Ratio		0.22			0.07	0.16	0.12	0.30		0.03	0.44	
Control Delay		1.9			22.0	2.5	5.6	7.7		5.4	11.5	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		1.9			22.0	2.5	5.6	7.7		5.4	11.5	

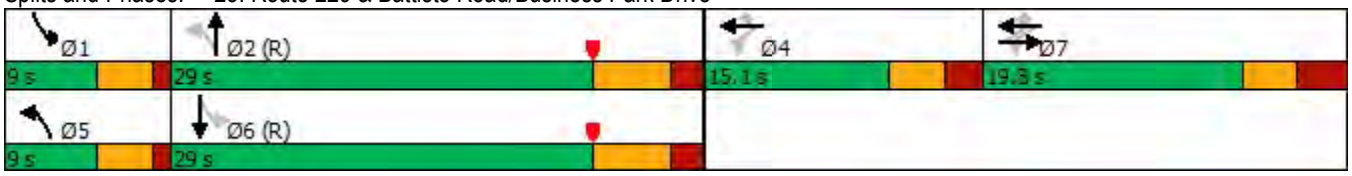
Lane Group	Ø4
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	4
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	12.1
Total Split (s)	15.1
Total Split (%)	21%
Maximum Green (s)	10.0
Yellow Time (s)	3.0
All-Red Time (s)	2.1
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A			C	A	A	A		A	B	
Approach Delay		1.9			7.7			7.6			11.4	
Approach LOS		A			A			A			B	
Queue Length 50th (ft)		0			8	0	7	77		2	160	
Queue Length 95th (ft)		0			24	10	19	153		9	228	
Internal Link Dist (ft)		594			403			760			901	
Turn Bay Length (ft)						175	60			180		
Base Capacity (vph)		425			463	525	403	2421		552	2234	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.14			0.05	0.11	0.12	0.30		0.03	0.44	

Intersection Summary

Area Type: Other
Cycle Length: 72.9
Actuated Cycle Length: 72.9
Offset: 34 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.44
Intersection Signal Delay: 9.4 Intersection LOS: A
Intersection Capacity Utilization 52.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 23: Route 229 & Battisto Road/Business Park Drive



Lane Group	Ø4
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	90	40	90	80	100	25	520	55	125	615	75
Future Volume (vph)	100	90	40	90	80	100	25	520	55	125	615	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	14	12
Storage Length (ft)	125		0	160		0	160		0	235		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			100			250		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.954			0.917			0.986			0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1777	0	1770	1708	0	1770	3490	0	1770	3715	0
Flt Permitted	0.595			0.667			0.367			0.415		
Satd. Flow (perm)	1108	1777	0	1242	1708	0	684	3490	0	773	3715	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			109			18			34	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		744			601			1500			891	
Travel Time (s)		16.9			13.7			25.6			15.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	98	43	98	87	109	27	565	60	136	668	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	141	0	98	196	0	27	625	0	136	750	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4			2			1 2		
Detector Phase	4	4		4	4		2	2		1	1 2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		5.0		
Minimum Split (s)	29.3	29.3		29.3	29.3		23.3	23.3		9.0		
Total Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		12.0		
Total Split (%)	40.0%	40.0%		40.0%	40.0%		40.0%	40.0%		20.0%		
Maximum Green (s)	18.7	18.7		18.7	18.7		15.7	15.7		8.0		
Yellow Time (s)	3.6	3.6		3.6	3.6		4.3	4.3		3.0		
All-Red Time (s)	1.7	1.7		1.7	1.7		4.0	4.0		1.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		
Total Lost Time (s)	5.3	5.3		5.3	5.3		8.3	8.3		4.0		
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		1.0		
Recall Mode	None	None		None	None		C-Max	C-Max		None		
Walk Time (s)	23.0	23.0		23.0	23.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	11.0	11.0		11.0	11.0		23.2	23.2		35.7	39.7	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.39	0.39		0.60	0.66	
v/c Ratio	0.54	0.40		0.43	0.49		0.10	0.46		0.23	0.30	
Control Delay	30.9	18.1		26.2	13.9		10.7	10.9		5.9	5.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	30.9	18.1		26.2	13.9		10.7	10.9		5.9	5.1	
LOS	C	B		C	B		B	B		A	A	
Approach Delay		23.7			18.0			10.9			5.2	
Approach LOS		C			B			B			A	
Queue Length 50th (ft)	37	34		33	28		1	18		14	42	
Queue Length 95th (ft)	69	66		61	67		22	170		43	97	
Internal Link Dist (ft)		664			521			1420			811	
Turn Bay Length (ft)	125			160			160			235		
Base Capacity (vph)	345	579		387	607		264	1362		616	2414	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.32	0.24		0.25	0.32		0.10	0.46		0.22	0.31	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 53 (88%), Referenced to phase 2:NBSB and 6:, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay: 11.0	Intersection LOS: B
Intersection Capacity Utilization 67.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 25: Route 229 & Cross Street/Redstone Hill Road

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	95	85	50	515	595	95
Future Volume (vph)	95	85	50	515	595	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12
Grade (%)	0%			6%	0%	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850			0.979	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1770	1794	0	3419	3465	0
Flt Permitted	0.950			0.835		
Satd. Flow (perm)	1770	1794	0	2867	3465	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		92			41	
Link Speed (mph)	30			40	40	
Link Distance (ft)	411			1591	1500	
Travel Time (s)	9.3			27.1	25.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	92	54	560	647	103
Shared Lane Traffic (%)						
Lane Group Flow (vph)	103	92	0	614	750	0
Turn Type	Prot	Prot	Perm	NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases			2		2	
Detector Phase	4	4	2	2	2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	15.0	15.0	15.0	
Minimum Split (s)	20.4	20.4	22.6	22.6	22.6	
Total Split (s)	23.0	23.0	37.0	37.0	37.0	
Total Split (%)	38.3%	38.3%	61.7%	61.7%	61.7%	
Maximum Green (s)	18.6	18.6	29.4	29.4	29.4	
Yellow Time (s)	3.0	3.0	4.4	4.4	4.4	
All-Red Time (s)	1.4	1.4	3.2	3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.4	4.4		7.6	7.6	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	0.2	0.2	0.2	
Recall Mode	None	None	C-Min	C-Min	C-Min	
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	7.2	7.2		44.2	44.2	
Actuated g/C Ratio	0.12	0.12		0.74	0.74	
v/c Ratio	0.49	0.31		0.29	0.29	
Control Delay	31.8	9.1		2.7	2.8	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	31.8	9.1		2.7	2.8	
LOS	C	A		A	A	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach Delay	21.1			2.7	2.8	
Approach LOS	C			A	A	
Queue Length 50th (ft)	36	0		5	37	
Queue Length 95th (ft)	72	32		47	49	
Internal Link Dist (ft)	331			1511	1420	
Turn Bay Length (ft)						
Base Capacity (vph)	548	619		2110	2562	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.19	0.15		0.29	0.29	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 31 (52%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 5.1	Intersection LOS: A
Intersection Capacity Utilization 56.8%	ICU Level of Service B
Analysis Period (min) 15	

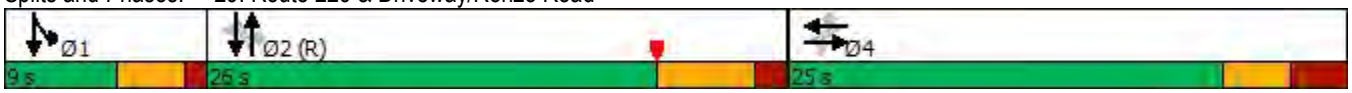
Splits and Phases: 27: Route 229 & Enterprise Dr North

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	135	0	35	0	625	140	60	615	0
Future Volume (vph)	0	0	0	135	0	35	0	625	140	60	615	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			7%			6%	
Storage Length (ft)	0		0	0		300	280		130	165		165
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt						0.850			0.850			
Flt Protected					0.950					0.950		
Satd. Flow (prot)	0	1863	0	0	1770	1583	1798	3415	1528	1717	3433	0
Flt Permitted					0.757					0.365		
Satd. Flow (perm)	0	1863	0	0	1410	1583	1798	3415	1528	660	3433	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						125			152			
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		261			414			713			1591	
Travel Time (s)		5.9			9.4			12.2			27.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	147	0	38	0	679	152	65	668	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	147	38	0	679	152	65	668	0
Turn Type				Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4		4	2		2	1 2		
Detector Phase	4	4		4	4	4	2	2	2	1	1 2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	15.0	15.0	15.0	5.0		
Minimum Split (s)	30.6	30.6		30.6	30.6	30.6	20.9	20.9	20.9	9.0		
Total Split (s)	25.0	25.0		25.0	25.0	25.0	26.0	26.0	26.0	9.0		
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	43.3%	43.3%	43.3%	15.0%		
Maximum Green (s)	19.4	19.4		19.4	19.4	19.4	20.1	20.1	20.1	5.0		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.4	4.4	4.4	3.0		
All-Red Time (s)	2.6	2.6		2.6	2.6	2.6	1.5	1.5	1.5	1.0		
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		5.6			5.6	5.6	5.9	5.9	5.9	4.0		
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	0.2	0.2	0.2	1.0		
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None		
Walk Time (s)	24.0	24.0		24.0	24.0	24.0						
Flash Dont Walk (s)	1.0	1.0		1.0	1.0	1.0						
Pedestrian Calls (#/hr)	0	0		0	0	0						
Act Effct Green (s)					9.8	9.8		29.0	29.0	38.7	43.5	
Actuated g/C Ratio					0.16	0.16		0.48	0.48	0.64	0.72	
v/c Ratio					0.64	0.10		0.41	0.19	0.12	0.27	
Control Delay					35.3	0.6		4.3	1.1	6.3	7.4	
Queue Delay					0.0	0.0		0.0	0.0	0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					35.3	0.6		4.3	1.1	6.3	7.4	
LOS					D	A		A	A	A	A	
Approach Delay					28.2			3.7			7.3	
Approach LOS					C			A			A	
Queue Length 50th (ft)					51	0		4	1	14	88	
Queue Length 95th (ft)					91	0		8	0	23	141	
Internal Link Dist (ft)		181			334			633			1511	
Turn Bay Length (ft)						300			130	165		
Base Capacity (vph)					455	596		1649	816	563	2488	
Starvation Cap Reductn					0	0		0	0	0	0	
Spillback Cap Reductn					0	0		0	0	0	0	
Storage Cap Reductn					0	0		0	0	0	0	
Reduced v/c Ratio					0.32	0.06		0.41	0.19	0.12	0.27	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 57 (95%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 7.8	Intersection LOS: A
Intersection Capacity Utilization 49.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 29: Route 229 & Driveway/Ronzo Road

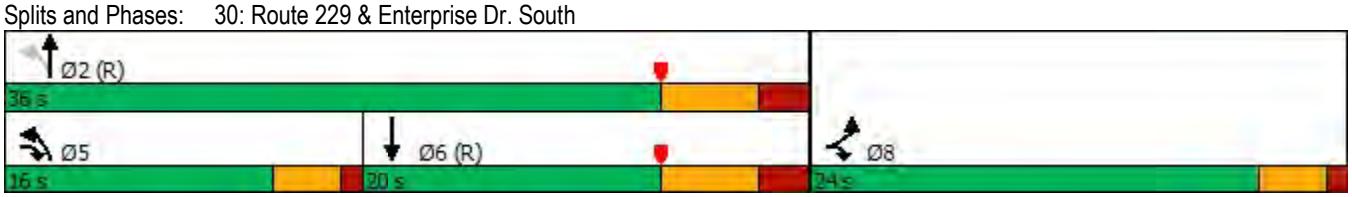


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	55	60	750	750	10
Future Volume (vph)	15	55	60	750	750	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			7%	7%	
Storage Length (ft)	0	0	745			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.998	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1708	3415	3409	0
Flt Permitted	0.950		0.296			
Satd. Flow (perm)	1770	1583	532	3415	3409	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		7			2	
Link Speed (mph)	30			40	40	
Link Distance (ft)	703			1424	713	
Travel Time (s)	16.0			24.3	12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	60	65	815	815	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	60	65	815	826	0
Turn Type	Prot	pt+ov	pm+pt	NA	NA	
Protected Phases	8	8 5	5	2	6	
Permitted Phases			2			
Detector Phase	8	8 5	5	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	24.0		9.0	21.7	21.7	
Total Split (s)	24.0		16.0	36.0	20.0	
Total Split (%)	40.0%		26.7%	60.0%	33.3%	
Maximum Green (s)	20.0		12.0	29.3	13.3	
Yellow Time (s)	3.0		3.0	4.4	4.4	
All-Red Time (s)	1.0		1.0	2.3	2.3	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0		4.0	6.7	6.7	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	C-Min	C-Min	
Walk Time (s)	19.0					
Flash Dont Walk (s)	1.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	7.2	13.4	48.8	48.8	39.1	
Actuated g/C Ratio	0.12	0.22	0.81	0.81	0.65	
v/c Ratio	0.08	0.17	0.12	0.29	0.37	
Control Delay	23.3	15.3	1.2	2.9	3.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Delay	23.3	15.3	1.2	2.9	3.1	
LOS	C	B	A	A	A	
Approach Delay	17.0			2.7	3.1	
Approach LOS	B			A	A	
Queue Length 50th (ft)	5	14	3	138	37	
Queue Length 95th (ft)	19	35	m0	1	57	
Internal Link Dist (ft)	623			1344	633	
Turn Bay Length (ft)			745			
Base Capacity (vph)	590	595	667	2775	2222	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.03	0.10	0.10	0.29	0.37	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.37	
Intersection Signal Delay: 3.5	Intersection LOS: A
Intersection Capacity Utilization 41.6%	ICU Level of Service A
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 30: Route 229 & Enterprise Dr. South

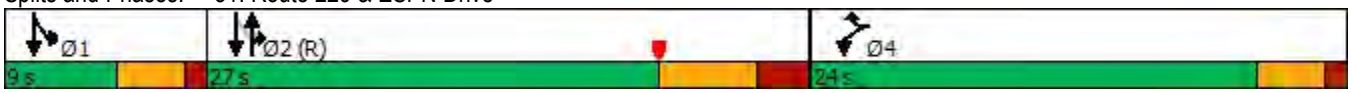


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	25	780	30	25	805
Future Volume (vph)	30	25	780	30	25	805
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			7%
Storage Length (ft)	0	0		105	95	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3539	1583	1708	3415
Flt Permitted	0.950				0.305	
Satd. Flow (perm)	1770	1583	3539	1583	548	3415
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		27		33		
Link Speed (mph)	30		40			40
Link Distance (ft)	370		539			1424
Travel Time (s)	8.4		9.2			24.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	27	848	33	27	875
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	27	848	33	27	875
Turn Type	Prot	Prot	NA	Prot	pm+pt	NA
Protected Phases	4	4	2	2	1	1 2
Permitted Phases					1 2	
Detector Phase	4	4	2	2	1	1 2
Switch Phase						
Minimum Initial (s)	5.0	5.0	14.0	14.0	4.0	
Minimum Split (s)	22.1	22.1	20.8	20.8	8.0	
Total Split (s)	24.0	24.0	27.0	27.0	9.0	
Total Split (%)	40.0%	40.0%	45.0%	45.0%	15.0%	
Maximum Green (s)	19.9	19.9	20.2	20.2	5.0	
Yellow Time (s)	3.0	3.0	4.4	4.4	3.0	
All-Red Time (s)	1.1	1.1	2.4	2.4	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.1	4.1	6.8	6.8	4.0	
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	5.0	5.0	2.0	
Recall Mode	None	None	C-Min	C-Min	None	
Walk Time (s)	17.0	17.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	5.8	5.8	32.9	32.9	45.7	51.3
Actuated g/C Ratio	0.10	0.10	0.55	0.55	0.76	0.86
v/c Ratio	0.19	0.15	0.44	0.04	0.04	0.30
Control Delay	27.1	12.8	6.2	1.7	0.6	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	27.1	12.8	6.2	1.7	0.6	0.6
LOS	C	B	A	A	A	A
Approach Delay	20.7		6.0			0.6
Approach LOS	C		A			A
Queue Length 50th (ft)	11	0	47	1	1	6
Queue Length 95th (ft)	33	19	225	5	m1	6
Internal Link Dist (ft)	290		459			1344
Turn Bay Length (ft)				105	95	
Base Capacity (vph)	587	543	1941	883	610	2919
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.05	0.44	0.04	0.04	0.30

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 15.7 (26%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.44	
Intersection Signal Delay: 3.8	Intersection LOS: A
Intersection Capacity Utilization 34.8%	ICU Level of Service A
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 31: Route 229 & ESPN Drive



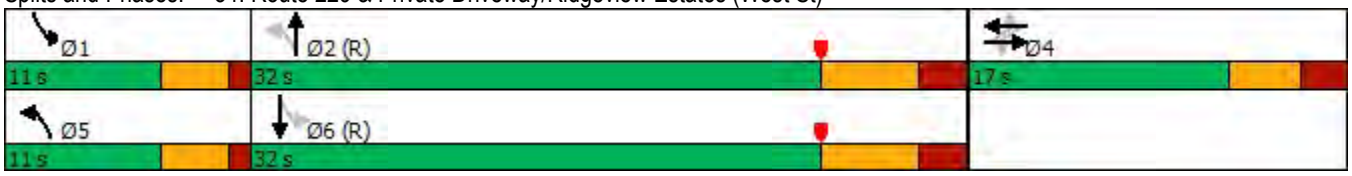
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	10	10	45	10	10	20	790	65	10	805	20
Future Volume (vph)	15	10	10	45	10	10	20	790	65	10	805	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		50	0		120	120		0	135		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	25			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.925			0.925			0.989			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1723	0	1770	1723	0	1770	3500	0	1770	1855	0
Flt Permitted	0.800			0.800			0.199			0.294		
Satd. Flow (perm)	1490	1723	0	1490	1723	0	371	3500	0	548	1855	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			11			18			3	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		299			498			1447			922	
Travel Time (s)		6.8			11.3			24.7			15.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	11	11	49	11	11	22	859	71	11	875	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	22	0	49	22	0	22	930	0	11	897	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4			2			6		
Detector Phase	4	4		4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	13.4	13.4		13.4	13.4		9.0	21.6		9.0	21.6	
Total Split (s)	17.0	17.0		17.0	17.0		11.0	32.0		11.0	32.0	
Total Split (%)	28.3%	28.3%		28.3%	28.3%		18.3%	53.3%		18.3%	53.3%	
Maximum Green (s)	11.6	11.6		11.6	11.6		7.0	25.4		7.0	25.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.1	2.1		2.1	2.1		1.0	2.2		1.0	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	5.4		5.4	5.4		4.0	6.6		4.0	6.6	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	0.2		1.5	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	8.2	8.2		8.2	8.2		47.0	46.0		47.0	46.0	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.78	0.77		0.78	0.77	
v/c Ratio	0.08	0.09		0.24	0.09		0.05	0.35		0.02	0.63	
Control Delay	23.5	17.3		26.3	17.3		2.4	3.0		0.9	9.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	23.5	17.3		26.3	17.3		2.4	3.0		0.9	9.6	
LOS	C	B		C	B		A	A		A	A	
Approach Delay		19.9			23.5			3.0			9.5	
Approach LOS		B			C			A			A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	5	4		16	4		2	40		0	125	
Queue Length 95th (ft)	20	21		42	21		m4	m54		m1	#570	
Internal Link Dist (ft)		219			418			1367			842	
Turn Bay Length (ft)	50						120			135		
Base Capacity (vph)	288	341		288	341		456	2687		575	1423	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.06		0.17	0.06		0.05	0.35		0.02	0.63	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 50 (83%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 7.1 Intersection LOS: A
Intersection Capacity Utilization 62.7% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 34: Route 229 & Private Driveway/Ridgeview Estates (West St)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	25	115	25	30	20	30	615	90	150	680	20
Future Volume (vph)	145	25	115	25	30	20	30	615	90	150	680	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	80		0	125		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.946			0.940			0.981			0.996	
Flt Protected		0.975		0.950			0.950			0.950		
Satd. Flow (prot)	0	1718	0	1770	1751	0	1770	3472	0	1770	1855	0
Flt Permitted		0.811		0.539			0.240			0.304		
Satd. Flow (perm)	0	1429	0	1004	1751	0	447	3472	0	566	1855	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47			22			35			3	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		906			1161			1141			1447	
Travel Time (s)		20.6			26.4			19.4			24.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	27	125	27	33	22	33	668	98	163	739	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	310	0	27	55	0	33	766	0	163	761	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Detector Phase	4	4		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	25.4	25.4		25.4	25.4		9.0	22.1		9.0	22.1	
Total Split (s)	15.0	15.0		15.0	15.0		11.0	34.0		11.0	34.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		18.3%	56.7%		18.3%	56.7%	
Maximum Green (s)	8.6	8.6		8.6	8.6		7.0	26.9		7.0	26.9	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	2.7		1.0	2.7	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.4		6.4	6.4		4.0	7.1		4.0	7.1	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	0.2		2.0	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	18.0	18.0		18.0	18.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		8.6		8.6	8.6		36.7	29.5		40.1	34.2	
Actuated g/C Ratio		0.14		0.14	0.14		0.61	0.49		0.67	0.57	
v/c Ratio		1.27		0.19	0.20		0.09	0.44		0.32	0.72	
Control Delay		172.5		26.3	17.9		4.5	15.2		3.3	14.0	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		172.5		26.3	17.9		4.5	15.2		3.3	14.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		F		C	B		A	B		A	B	
Approach Delay		172.5			20.6			14.7			12.1	
Approach LOS		F			C			B			B	
Queue Length 50th (ft)		~131		9	11		3	103		12	56	
Queue Length 95th (ft)		#269		29	38		m13	193		m1	#453	
Internal Link Dist (ft)		826			1081			1061			1367	
Turn Bay Length (ft)							80			125		
Base Capacity (vph)		245		143	269		438	1723		518	1057	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		1.27		0.19	0.20		0.08	0.44		0.31	0.72	

Intersection Summary

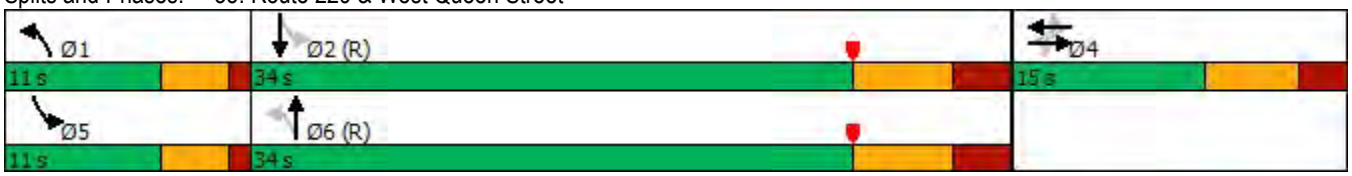
Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 24 (40%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.27
Intersection Signal Delay: 36.9 Intersection LOS: D
Intersection Capacity Utilization 78.8% ICU Level of Service D
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 35: Route 229 & West Queen Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	50	40	705	790	35
Future Volume (vph)	35	50	40	705	790	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt		0.850			0.994	
Flt Protected	0.950			0.997		
Satd. Flow (prot)	1770	1583	0	3529	1852	0
Flt Permitted	0.950			0.773		
Satd. Flow (perm)	1770	1583	0	2736	1852	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		54			5	
Link Speed (mph)	30			40	40	
Link Distance (ft)	745			2535	1141	
Travel Time (s)	16.9			43.2	19.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	54	43	766	859	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	54	0	809	897	0
Turn Type	Prot	Perm	D.P+P	NA	NA	
Protected Phases	4		1	1 2	2	
Permitted Phases		4	2			
Detector Phase	4	4	1	1 2	2	
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		15.0	
Minimum Split (s)	30.0	30.0	8.0		24.8	
Total Split (s)	18.0	18.0	8.0		34.0	
Total Split (%)	30.0%	30.0%	13.3%		56.7%	
Maximum Green (s)	14.0	14.0	4.0		27.2	
Yellow Time (s)	3.0	3.0	3.0		4.4	
All-Red Time (s)	1.0	1.0	1.0		2.4	
Lost Time Adjust (s)	0.0	0.0			0.0	
Total Lost Time (s)	4.0	4.0			6.8	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	None	None	Max		C-Max	
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	7.4	7.4		45.0	27.2	
Actuated g/C Ratio	0.12	0.12		0.75	0.45	
v/c Ratio	0.17	0.22		0.36	1.07	
Control Delay	25.3	10.3		2.7	59.8	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	25.3	10.3		2.7	59.8	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
LOS	C	B		A	E	
Approach Delay	16.5			2.7	59.8	
Approach LOS	B			A	E	
Queue Length 50th (ft)	13	0		34	~379	
Queue Length 95th (ft)	35	26		58	m#511	
Internal Link Dist (ft)	665			2455	1061	
Turn Bay Length (ft)		100				
Base Capacity (vph)	413	410		2247	842	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.09	0.13		0.36	1.07	

Intersection Summary

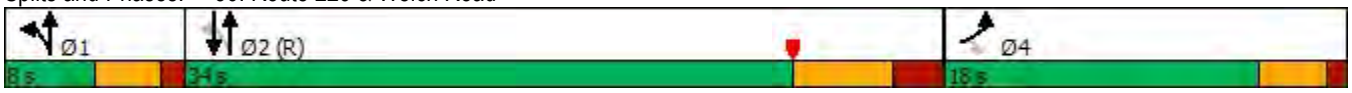
Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 44 (73%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 31.9 Intersection LOS: C
Intersection Capacity Utilization 61.8% ICU Level of Service B
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 36: Route 229 & Welch Road

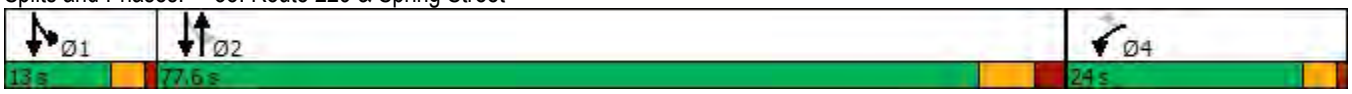


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	55	70	660	60	80	760
Future Volume (vph)	55	70	660	60	80	760
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		7%			0%
Storage Length (ft)	0	95		0	205	
Storage Lanes	1	1		0	1	
Taper Length (ft)	100				180	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt		0.850	0.988			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3374	0	1770	1863
Flt Permitted	0.950				0.339	
Satd. Flow (perm)	1770	1583	3374	0	631	1863
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		76	15			
Link Speed (mph)	30		40			40
Link Distance (ft)	911		3080			2535
Travel Time (s)	20.7		52.5			43.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	76	717	65	87	826
Shared Lane Traffic (%)						
Lane Group Flow (vph)	60	76	782	0	87	826
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	4		2		1	1 2
Permitted Phases		4			1 2	
Detector Phase	4	4	2		1	1 2
Switch Phase						
Minimum Initial (s)	9.0	9.0	25.0		5.0	
Minimum Split (s)	20.0	20.0	32.6		9.0	
Total Split (s)	24.0	24.0	77.6		13.0	
Total Split (%)	20.9%	20.9%	67.7%		11.3%	
Maximum Green (s)	20.0	20.0	70.0		9.0	
Yellow Time (s)	3.0	3.0	4.9		3.0	
All-Red Time (s)	1.0	1.0	2.7		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0	7.6		4.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	4.0		2.0	
Recall Mode	None	None	Min		Min	
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	10.4	10.4	41.0		54.0	59.7
Actuated g/C Ratio	0.14	0.14	0.56		0.74	0.82
v/c Ratio	0.24	0.26	0.41		0.14	0.54
Control Delay	38.2	12.7	9.7		2.7	4.8
Queue Delay	0.0	0.0	0.0		0.0	0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	38.2	12.7	9.7		2.7	4.8
LOS	D	B	A		A	A
Approach Delay	24.0		9.7			4.6
Approach LOS	C		A			A
Queue Length 50th (ft)	24	0	100		7	114
Queue Length 95th (ft)	80	43	145		17	210
Internal Link Dist (ft)	831		3000			2455
Turn Bay Length (ft)		95			205	
Base Capacity (vph)	530	527	3033		627	1792
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.11	0.14	0.26		0.14	0.46

Intersection Summary	
Area Type: Other	
Cycle Length: 114.6	
Actuated Cycle Length: 73.1	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay: 8.2	Intersection LOS: A
Intersection Capacity Utilization 54.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 38: Route 229 & Spring Street



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	35	50	670	35	65	750
Future Volume (vph)	35	50	670	35	65	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	12	12	12	12
Grade (%)	0%		0%			7%
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.921		0.993			
Flt Protected	0.980					0.996
Satd. Flow (prot)	1793	0	3514	0	0	1790
Flt Permitted	0.980					0.890
Satd. Flow (perm)	1793	0	3514	0	0	1600
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	54		12			
Link Speed (mph)	30		40			40
Link Distance (ft)	335		424			3080
Travel Time (s)	7.6		7.2			52.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	54	728	38	71	815
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	0	766	0	0	886
Turn Type	Prot		NA		Perm	NA
Protected Phases	4		2			2
Permitted Phases					2	
Detector Phase	4		2		2	2
Switch Phase						
Minimum Initial (s)	9.0		15.0		15.0	15.0
Minimum Split (s)	23.0		21.3		21.3	21.3
Total Split (s)	24.0		46.3		46.3	46.3
Total Split (%)	34.1%		65.9%		65.9%	65.9%
Maximum Green (s)	20.0		40.0		40.0	40.0
Yellow Time (s)	3.0		4.6		4.6	4.6
All-Red Time (s)	1.0		1.7		1.7	1.7
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	4.0		6.3			6.3
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.5		2.5		2.5	2.5
Recall Mode	None		Min		Min	Min
Walk Time (s)	18.0					
Flash Dont Walk (s)	1.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	9.1		47.1			47.1
Actuated g/C Ratio	0.15		0.76			0.76
v/c Ratio	0.30		0.29			0.73
Control Delay	15.0		3.6			11.7
Queue Delay	0.0		0.0			0.0
Total Delay	15.0		3.6			11.7
LOS	B		A			B

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Approach Delay	15.0		3.6			11.7
Approach LOS	B		A			B
Queue Length 50th (ft)	14		46			184
Queue Length 95th (ft)	47		67			#462
Internal Link Dist (ft)	255		344			3000
Turn Bay Length (ft)						
Base Capacity (vph)	624		2674			1216
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.15		0.29			0.73

Intersection Summary	
Area Type: Other	
Cycle Length: 70.3	
Actuated Cycle Length: 62	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 8.3	Intersection LOS: A
Intersection Capacity Utilization 84.0%	ICU Level of Service E
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 41: Route 229 & Curtiss Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	0	25	30	0	15	45	745	20	10	760	35
Future Volume (vph)	15	0	25	30	0	15	45	745	20	10	760	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	65		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.915			0.956			0.996			0.993	
Flt Protected		0.982			0.967		0.950			0.950		
Satd. Flow (prot)	0	1674	0	0	1722	0	1770	3525	0	1770	1850	0
Flt Permitted		0.862			0.771		0.268			0.339		
Satd. Flow (perm)	0	1469	0	0	1373	0	499	3525	0	631	1850	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		58			58			7			6	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		287			281			412			424	
Travel Time (s)		6.5			6.4			7.0			7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	0	27	33	0	16	49	810	22	11	826	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	43	0	0	49	0	49	832	0	11	864	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	17.5	17.5		17.5	17.5		21.4	21.4		21.4	21.4	
Total Split (s)	22.0	22.0		22.0	22.0		42.4	42.4		42.4	42.4	
Total Split (%)	34.2%	34.2%		34.2%	34.2%		65.8%	65.8%		65.8%	65.8%	
Maximum Green (s)	17.5	17.5		17.5	17.5		36.0	36.0		36.0	36.0	
Yellow Time (s)	3.4	3.4		3.4	3.4		4.9	4.9		4.9	4.9	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		6.4	6.4		6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Recall Mode	C-Min	C-Min		C-Min	C-Min		Max	Max		Max	Max	
Walk Time (s)	12.0	12.0		12.0	12.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		7.0			7.0		46.5	46.5		46.5	46.5	
Actuated g/C Ratio		0.11			0.11		0.72	0.72		0.72	0.72	
v/c Ratio		0.20			0.24		0.14	0.33		0.02	0.65	
Control Delay		8.8			10.6		3.8	3.6		2.7	7.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	1.7	
Total Delay		8.8			10.6		3.8	3.6		2.7	9.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A			B		A	A		A	A	
Approach Delay		8.8			10.6			3.6			9.0	
Approach LOS		A			B			A			A	
Queue Length 50th (ft)		0			0		5	46		1	133	
Queue Length 95th (ft)		20			24		13	66		4	225	
Internal Link Dist (ft)		207			201			332			344	
Turn Bay Length (ft)							100			65		
Base Capacity (vph)		441			415		360	2547		455	1337	
Starvation Cap Reductn		0			0		0	0		0	293	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.10			0.12		0.14	0.33		0.02	0.83	

Intersection Summary

Area Type: Other
Cycle Length: 64.4
Actuated Cycle Length: 64.4
Offset: 49 (76%), Referenced to phase 4:EBWB, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 6.5 Intersection LOS: A
Intersection Capacity Utilization 57.0% ICU Level of Service B
Analysis Period (min) 15

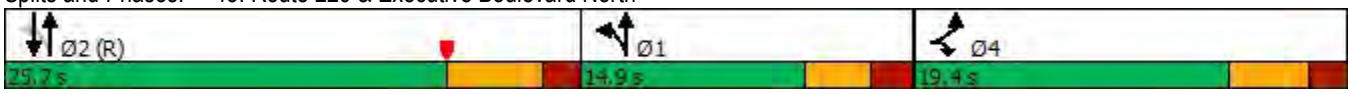
Splits and Phases: 42: Route 229 & Corporate Drive/Centrion Plaza Drive

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	30	785	805	15
Future Volume (vph)	0	0	30	785	805	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	360	220			240
Storage Lanes	1	1	1			1
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt					0.997	
Flt Protected			0.950			
Satd. Flow (prot)	1863	1863	1770	3539	3529	0
Flt Permitted			0.316			
Satd. Flow (perm)	1863	1863	589	3539	3529	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)					3	
Link Speed (mph)	30			40	40	
Link Distance (ft)	694			570	291	
Travel Time (s)	15.8			9.7	5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	33	853	875	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	33	853	891	0
Turn Type	Prot	Prot	pm+pt	NA	NA	
Protected Phases	4	4	1	1 2	2	
Permitted Phases			1 2			
Detector Phase	4	4	1	1 2	2	
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		15.0	
Minimum Split (s)	12.4	12.4	8.9		21.0	
Total Split (s)	19.4	19.4	14.9		25.7	
Total Split (%)	32.3%	32.3%	24.8%		42.8%	
Maximum Green (s)	14.0	14.0	10.0		19.7	
Yellow Time (s)	3.6	3.6	3.0		4.3	
All-Red Time (s)	1.8	1.8	1.9		1.7	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.4	5.4	4.9		6.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.5	2.5	2.0		0.2	
Recall Mode	None	None	None		C-Max	
Walk Time (s)	24.0	24.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)			50.2	60.0	41.7	
Actuated g/C Ratio			0.84	1.00	0.70	
v/c Ratio			0.05	0.24	0.36	
Control Delay			0.6	0.2	4.4	
Queue Delay			0.0	0.0	0.0	
Total Delay			0.6	0.2	4.4	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
LOS			A	A	A	
Approach Delay				0.2	4.4	
Approach LOS				A	A	
Queue Length 50th (ft)			1	0	51	
Queue Length 95th (ft)			0	0	91	
Internal Link Dist (ft)	614			490	211	
Turn Bay Length (ft)			220			
Base Capacity (vph)			714	3400	2451	
Starvation Cap Reductn			0	0	0	
Spillback Cap Reductn			0	0	0	
Storage Cap Reductn			0	0	0	
Reduced v/c Ratio			0.05	0.25	0.36	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 59 (98%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.36	
Intersection Signal Delay: 2.3	Intersection LOS: A
Intersection Capacity Utilization 29.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 43: Route 229 & Executive Boulevard North

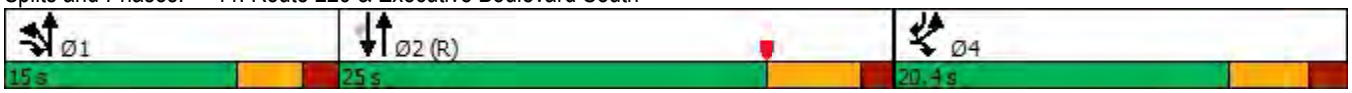


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	120	100	150	700	705	100
Future Volume (vph)	120	100	150	700	705	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			5%	0%	
Storage Length (ft)	860	370	335			250
Storage Lanes	1	1	2			1
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	0.88	0.97	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	2787	3347	3451	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	2787	3347	3451	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		75				109
Link Speed (mph)	30			40	40	
Link Distance (ft)	945			579	570	
Travel Time (s)	21.5			9.9	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	109	163	761	766	109
Shared Lane Traffic (%)						
Lane Group Flow (vph)	130	109	163	761	766	109
Turn Type	Prot	pt+ov	Prot	NA	NA	pm+ov
Protected Phases	4	1 4	1	1 2	2	4
Permitted Phases		1 4				2
Detector Phase	4	1 4	1	1 2	2	4
Switch Phase						
Minimum Initial (s)	7.0		4.0		15.0	7.0
Minimum Split (s)	12.4		8.6		20.8	12.4
Total Split (s)	20.4		15.0		25.0	20.4
Total Split (%)	33.8%		24.8%		41.4%	33.8%
Maximum Green (s)	15.0		10.4		19.2	15.0
Yellow Time (s)	3.6		3.0		4.3	3.6
All-Red Time (s)	1.8		1.6		1.5	1.8
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.4		4.6		5.8	5.4
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.5		2.0		0.2	2.5
Recall Mode	None		None		C-Max	None
Walk Time (s)	22.0					22.0
Flash Dont Walk (s)	1.0					1.0
Pedestrian Calls (#/hr)	0					0
Act Effct Green (s)	9.5	23.7	10.7	44.3	26.8	42.2
Actuated g/C Ratio	0.16	0.39	0.18	0.73	0.44	0.70
v/c Ratio	0.47	0.10	0.27	0.30	0.49	0.10
Control Delay	28.1	3.7	21.7	4.4	15.8	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Delay	28.1	3.7	21.7	4.4	15.8	1.4
LOS	C	A	C	A	B	A
Approach Delay	17.0			7.5	14.0	
Approach LOS	B			A	B	
Queue Length 50th (ft)	44	3	26	47	110	0
Queue Length 95th (ft)	83	14	48	87	181	13
Internal Link Dist (ft)	865			499	490	
Turn Bay Length (ft)	860	370	335			250
Base Capacity (vph)	439	1191	660	2486	1572	1246
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.09	0.25	0.31	0.49	0.09

Intersection Summary	
Area Type: Other	
Cycle Length: 60.4	
Actuated Cycle Length: 60.4	
Offset: 21 (35%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 11.4	Intersection LOS: B
Intersection Capacity Utilization 43.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 44: Route 229 & Executive Boulevard South



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	160	0	185	40	660	0	0	405	405
Future Volume (vph)	0	0	0	160	0	185	40	660	0	0	405	405
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			5%	
Storage Length (ft)	0		0	240		440	90		0	0		250
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			100			100			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950	0.950		0.950					
Satd. Flow (prot)	0	0	0	1681	1681	1583	1770	3539	0	0	3451	1544
Flt Permitted				0.950	0.950		0.497					
Satd. Flow (perm)	0	0	0	1681	1681	1583	926	3539	0	0	3451	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						201						440
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		337			747			508			579	
Travel Time (s)		7.7			17.0			8.7			9.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	174	0	201	43	717	0	0	440	440
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	0	0	87	87	201	43	717	0	0	440	440
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					4		1	1 2			2	
Permitted Phases				4		4	1 2					2
Detector Phase				4	4	4	1	1 2			2	2
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0	5.0				15.0	15.0
Minimum Split (s)				12.7	12.7	12.7	9.0				21.2	21.2
Total Split (s)				20.7	20.7	20.7	11.0				28.3	28.3
Total Split (%)				34.5%	34.5%	34.5%	18.3%				47.2%	47.2%
Maximum Green (s)				15.0	15.0	15.0	7.0				22.1	22.1
Yellow Time (s)				3.0	3.0	3.0	3.0				4.3	4.3
All-Red Time (s)				2.7	2.7	2.7	1.0				1.9	1.9
Lost Time Adjust (s)				0.0	0.0	0.0	0.0				0.0	0.0
Total Lost Time (s)				5.7	5.7	5.7	4.0				6.2	6.2
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)				2.0	2.0	2.0	2.0				0.2	0.2
Recall Mode				None	None	None	None				C-Max	C-Max
Act Effct Green (s)				8.4	8.4	8.4	37.9	41.9			26.5	26.5
Actuated g/C Ratio				0.14	0.14	0.14	0.63	0.70			0.44	0.44
v/c Ratio				0.37	0.37	0.51	0.06	0.29			0.29	0.47
Control Delay				27.5	27.5	9.0	3.6	4.0			12.2	3.6
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				27.5	27.5	9.0	3.6	4.0			12.2	3.6
LOS				C	C	A	A	A			B	A
Approach Delay					17.6			4.0			7.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS					B			A			A	
Queue Length 50th (ft)				31	31	0	4	36			50	0
Queue Length 95th (ft)				64	64	46	13	73			91	50
Internal Link Dist (ft)		257			667			428			499	
Turn Bay Length (ft)				240		440	90					250
Base Capacity (vph)				420	420	546	715	2426			1524	927
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.21	0.21	0.37	0.06	0.30			0.29	0.47

Intersection Summary

Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 20 (33%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 8.2	Intersection LOS: A
Intersection Capacity Utilization 48.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 45: Route 229 & I-84 WB On Ramp/I-84 WB Off Ramp

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	790	5	300	1035	10	445	0	345	5	10	5
Future Volume (vph)	5	790	5	300	1035	10	445	0	345	5	10	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		150	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt		0.999			0.999				0.850		0.968	
Flt Protected					0.989		0.950	0.950			0.988	
Satd. Flow (prot)	0	3536	0	0	3497	0	1681	1681	1583	0	1781	0
Flt Permitted		0.943			0.563		0.950	0.950			0.988	
Satd. Flow (perm)	0	3334	0	0	1991	0	1681	1681	1583	0	1781	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			1				173		5	
Link Speed (mph)		35			35			35			30	
Link Distance (ft)		363			299			709			169	
Travel Time (s)		7.1			5.8			13.8			3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	859	5	326	1125	11	484	0	375	5	11	5
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	0	869	0	0	1462	0	242	242	375	0	21	0
Turn Type	Perm	NA		D.P+P	NA		Split	NA	pm+ov	Split	NA	
Protected Phases		2		1	1 2		5	5	1	4	4	
Permitted Phases	2			2					5			
Detector Phase	2	2		1	1 2		5	5	1	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		7.0			9.0	9.0	7.0	5.0	5.0	
Minimum Split (s)	22.4	22.4		11.0			13.0	13.0	11.0	24.3	24.3	
Total Split (s)	54.0	54.0		10.0			25.0	25.0	10.0	11.0	11.0	
Total Split (%)	54.0%	54.0%		10.0%			25.0%	25.0%	10.0%	11.0%	11.0%	
Maximum Green (s)	46.6	46.6		6.0			21.0	21.0	6.0	4.7	4.7	
Yellow Time (s)	4.4	4.4		3.0			3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		1.0			1.0	1.0	1.0	3.3	3.3	
Lost Time Adjust (s)		0.0					0.0	0.0	0.0		0.0	
Total Lost Time (s)		7.4					4.0	4.0	4.0		6.3	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2		0.2			3.0	3.0	0.2	1.5	1.5	
Recall Mode	C-Max	C-Max		Min			Min	Min	Min	None	None	
Walk Time (s)										17.0	17.0	
Flash Dont Walk (s)										1.0	1.0	
Pedestrian Calls (#/hr)										0	0	
Act Effct Green (s)		46.6			65.4		18.2	18.2	36.0		4.9	
Actuated g/C Ratio		0.47			0.65		0.18	0.18	0.36		0.05	
v/c Ratio		0.56			0.95		0.79	0.79	0.55		0.23	
Control Delay		21.0			31.3		57.5	57.5	14.8		44.4	
Queue Delay		0.0			0.0		0.0	0.0	0.0		0.0	
Total Delay		21.0			31.3		57.5	57.5	14.8		44.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		C			C		E	E	B		D	
Approach Delay		21.0			31.3			38.9			44.4	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)		203			198		153	153	86		10	
Queue Length 95th (ft)		263			#702		#244	#244	168		35	
Internal Link Dist (ft)		283			219			629			89	
Turn Bay Length (ft)							150		150			
Base Capacity (vph)		1554			1533		353	353	680		91	
Starvation Cap Reductn		0			0		0	0	0		0	
Spillback Cap Reductn		0			0		0	0	0		0	
Storage Cap Reductn		0			0		0	0	0		0	
Reduced v/c Ratio		0.56			0.95		0.69	0.69	0.55		0.23	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 54 (54%), Referenced to phase 2:EBWB, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 30.6 Intersection LOS: C
Intersection Capacity Utilization 91.6% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Route 229/Driveway & Route 6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	35	65	105	80	0	5	870	140	35	670	0
Future Volume (vph)	10	35	65	105	80	0	5	870	140	35	670	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.920						0.981				
Flt Protected		0.995			0.972						0.998	
Satd. Flow (prot)	0	1705	0	0	1811	0	0	1827	0	0	1859	0
Flt Permitted		0.966			0.767			0.997			0.916	
Satd. Flow (perm)	0	1655	0	0	1429	0	0	1822	0	0	1706	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		71						12				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		859			830			899			709	
Travel Time (s)		19.5			18.9			17.5			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	38	71	114	87	0	5	946	152	38	728	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	120	0	0	201	0	0	1103	0	0	766	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	9.0	9.0		9.0	9.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	13.4	13.4		13.4	13.4		25.3	25.3		25.3	25.3	
Total Split (s)	24.4	24.4		24.4	24.4		25.6	25.6		25.6	25.6	
Total Split (%)	34.9%	34.9%		34.9%	34.9%		36.6%	36.6%		36.6%	36.6%	
Maximum Green (s)	20.0	20.0		20.0	20.0		20.3	20.3		20.3	20.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.8	3.8		3.8	3.8	
All-Red Time (s)	1.4	1.4		1.4	1.4		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.4			4.4			5.3			5.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		14.9			14.9			45.4			45.4	
Actuated g/C Ratio		0.21			0.21			0.65			0.65	
v/c Ratio		0.29			0.66			0.93			0.69	
Control Delay		11.9			35.3			29.6			13.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		11.9			35.3			29.6			13.8	
LOS		B			D			C			B	
Approach Delay		11.9			35.3			29.6			13.8	
Approach LOS		B			D			C			B	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	29%
Maximum Green (s)	16.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	9.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		17			80			456			178	
Queue Length 95th (ft)		50			128			#758			#465	
Internal Link Dist (ft)		779			750			819			629	
Turn Bay Length (ft)												
Base Capacity (vph)		528			413			1187			1107	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.23			0.49			0.93			0.69	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 45.7 (65%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 23.7 Intersection LOS: C
Intersection Capacity Utilization 85.1% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Route 229 & Moody St/Louisianna Ave

Lane Group	Ø3
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	5	10	30	0	15	35	990	30	15	835	20
Future Volume (vph)	15	5	10	30	0	15	35	990	30	15	835	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.954			0.956			0.996			0.997	
Flt Protected		0.976			0.967			0.998			0.999	
Satd. Flow (prot)	0	1734	0	0	1722	0	0	1852	0	0	1855	0
Flt Permitted		0.817			0.778			0.952			0.976	
Satd. Flow (perm)	0	1452	0	0	1385	0	0	1766	0	0	1813	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			108			2			2	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		480			517			662			899	
Travel Time (s)		10.9			11.8			12.9			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	5	11	33	0	16	38	1076	33	16	908	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	49	0	0	1147	0	0	946	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	14.7	14.7		14.7	14.7		25.9	25.9		25.9	25.9	
Total Split (s)	19.7	19.7		19.7	19.7		25.9	25.9		25.9	25.9	
Total Split (%)	28.1%	28.1%		28.1%	28.1%		37.0%	37.0%		37.0%	37.0%	
Maximum Green (s)	15.0	15.0		15.0	15.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.8	3.8		3.8	3.8	
All-Red Time (s)	1.7	1.7		1.7	1.7		2.1	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.7			4.7			5.9			5.9	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		10.0			10.0			57.6			57.6	
Actuated g/C Ratio		0.14			0.14			0.82			0.82	
v/c Ratio		0.15			0.17			0.79			0.63	
Control Delay		21.7			1.8			9.0			5.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		21.7			1.8			9.0			5.9	
LOS		C			A			A			A	
Approach Delay		21.7			1.8			9.0			5.9	
Approach LOS		C			A			A			A	

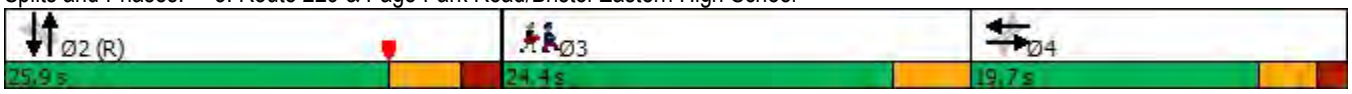
Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	22.0
Total Split (s)	24.4
Total Split (%)	35%
Maximum Green (s)	20.4
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		8			0			154			296	
Queue Length 95th (ft)		31			4			m#670			87	
Internal Link Dist (ft)		400			437			582			819	
Turn Bay Length (ft)												
Base Capacity (vph)		319			381			1454			1493	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.10			0.13			0.79			0.63	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 1 (1%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 7.7 Intersection LOS: A
Intersection Capacity Utilization 90.0% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Route 229 & Page Park Road/Bristol Eastern High School



Lane Group	Ø3
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	NBL	NBT	SBT	SBR	NEL	NER	Ø3
Lane Configurations							
Traffic Volume (vph)	30	935	835	35	120	35	
Future Volume (vph)	30	935	835	35	120	35	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.995		0.969		
Flt Protected		0.998			0.963		
Satd. Flow (prot)	0	1859	1853	0	1738	0	
Flt Permitted		0.957			0.963		
Satd. Flow (perm)	0	1783	1853	0	1738	0	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			3		21		
Link Speed (mph)		35	35		30		
Link Distance (ft)		1271	662		359		
Travel Time (s)		24.8	12.9		8.2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	33	1016	908	38	130	38	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	1049	946	0	168	0	
Turn Type	Perm	NA	NA		Prot		
Protected Phases		2	2		4		3
Permitted Phases	2						
Detector Phase	2	2	2		4		
Switch Phase							
Minimum Initial (s)	20.0	20.0	20.0		10.0		1.0
Minimum Split (s)	25.0	25.0	25.0		24.5		22.5
Total Split (s)	25.0	25.0	25.0		24.0		21.0
Total Split (%)	35.7%	35.7%	35.7%		34.3%		30%
Maximum Green (s)	20.0	20.0	20.0		20.0		19.0
Yellow Time (s)	4.0	4.0	4.0		3.0		2.0
All-Red Time (s)	1.0	1.0	1.0		1.0		0.0
Lost Time Adjust (s)		0.0	0.0		0.0		
Total Lost Time (s)		5.0	5.0		4.0		
Lead/Lag					Lag		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	5.0	5.0	5.0		3.0		0.2
Recall Mode	C-Min	C-Min	C-Min		None		None
Walk Time (s)							7.0
Flash Dont Walk (s)							10.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)		48.9	48.9		12.1		
Actuated g/C Ratio		0.70	0.70		0.17		
v/c Ratio		0.84	0.73		0.53		
Control Delay		17.4	6.7		28.8		
Queue Delay		0.0	0.0		0.0		
Total Delay		17.4	6.7		28.8		
LOS		B	A		C		
Approach Delay		17.4	6.7		28.8		
Approach LOS		B	A		C		

Lane Group	NBL	NBT	SBT	SBR	NEL	NER	Ø3
Queue Length 50th (ft)		254	57		59		
Queue Length 95th (ft)		#656	129		106		
Internal Link Dist (ft)		1191	582		279		
Turn Bay Length (ft)							
Base Capacity (vph)		1245	1295		511		
Starvation Cap Reductn		0	0		0		
Spillback Cap Reductn		0	0		0		
Storage Cap Reductn		0	0		0		
Reduced v/c Ratio		0.84	0.73		0.33		

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 2 (3%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 13.6 Intersection LOS: B
Intersection Capacity Utilization 89.7% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Woodland Street & Route 229

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations							
Traffic Volume (vph)	150	185	765	140	140	750	
Future Volume (vph)	150	185	765	140	140	750	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	0		0	160		
Storage Lanes	1	0		0	1		
Taper Length (ft)	25				100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	0.925		0.979				
Flt Protected	0.978				0.950		
Satd. Flow (prot)	1685	0	1824	0	1770	1863	
Flt Permitted	0.978				0.950		
Satd. Flow (perm)	1685	0	1824	0	1770	1863	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)	50		9				
Link Speed (mph)	30		35			35	
Link Distance (ft)	835		2121			1598	
Travel Time (s)	19.0		41.3			31.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	163	201	832	152	152	815	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	364	0	984	0	152	815	
Turn Type	Prot		NA		Prot	NA	
Protected Phases	4		2		1	1 2	3
Permitted Phases							
Detector Phase	4		2		1	1 2	
Switch Phase							
Minimum Initial (s)	9.0		15.0		5.0		1.0
Minimum Split (s)	22.0		20.9		9.0		21.0
Total Split (s)	34.0		55.0		9.0		21.0
Total Split (%)	28.6%		46.2%		7.6%		18%
Maximum Green (s)	30.0		49.1		5.0		17.0
Yellow Time (s)	3.0		4.0		3.0		4.0
All-Red Time (s)	1.0		1.9		1.0		0.0
Lost Time Adjust (s)	0.0		0.0		0.0		
Total Lost Time (s)	4.0		5.9		4.0		
Lead/Lag	Lag		Lag		Lead		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0		4.0		1.0		0.2
Recall Mode	None		Min		None		None
Walk Time (s)							7.0
Flash Dont Walk (s)							10.0
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	21.8		49.3		5.0	60.3	
Actuated g/C Ratio	0.24		0.55		0.06	0.67	
v/c Ratio	0.82		0.98		1.55	0.65	
Control Delay	42.9		46.9		321.5	13.2	
Queue Delay	0.0		0.0		0.0	0.0	
Total Delay	42.9		46.9		321.5	13.2	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
LOS	D		D		F	B	
Approach Delay	42.9		46.9			61.6	
Approach LOS	D		D			E	
Queue Length 50th (ft)	170		513		~123	242	
Queue Length 95th (ft)	272		#928		#265	469	
Internal Link Dist (ft)	755		2041			1518	
Turn Bay Length (ft)					160		
Base Capacity (vph)	596		1002		98	1246	
Starvation Cap Reductn	0		0		0	0	
Spillback Cap Reductn	0		0		0	0	
Storage Cap Reductn	0		0		0	0	
Reduced v/c Ratio	0.61		0.98		1.55	0.65	

Intersection Summary

Area Type: Other
Cycle Length: 119
Actuated Cycle Length: 90.1
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.55
Intersection Signal Delay: 52.4 Intersection LOS: D
Intersection Capacity Utilization 87.8% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Route 229 & West Washington Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	400	115	925	220	50	715
Future Volume (vph)	400	115	925	220	50	715
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	490	325		130	220	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3433	1583	3539	1583	1770	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		125		239		
Link Speed (mph)	30		30			30
Link Distance (ft)	911		424			459
Travel Time (s)	20.7		9.6			10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	435	125	1005	239	54	777
Shared Lane Traffic (%)						
Lane Group Flow (vph)	435	125	1005	239	54	777
Turn Type	Prot	Prot	NA	pm+ov	Prot	NA
Protected Phases	4	4	2	4	1	1 2
Permitted Phases				2		
Detector Phase	4	4	2	4	1	1 2
Switch Phase						
Minimum Initial (s)	6.0	6.0	15.0	6.0	6.0	
Minimum Split (s)	25.0	25.0	20.9	25.0	10.9	
Total Split (s)	30.0	30.0	55.0	30.0	15.0	
Total Split (%)	30.0%	30.0%	55.0%	30.0%	15.0%	
Maximum Green (s)	26.0	26.0	49.1	26.0	10.1	
Yellow Time (s)	3.0	3.0	4.9	3.0	3.3	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	5.9	4.0	4.9	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	3.0	2.0	3.0	
Recall Mode	None	None	C-Min	None	None	
Walk Time (s)	1.0	1.0		1.0		
Flash Dont Walk (s)	20.0	20.0		20.0		
Pedestrian Calls (#/hr)	0	0		0		
Act Effct Green (s)	17.2	17.2	53.9	77.0	14.1	73.9
Actuated g/C Ratio	0.17	0.17	0.54	0.77	0.14	0.74
v/c Ratio	0.74	0.33	0.53	0.19	0.22	0.30
Control Delay	46.8	8.7	13.7	0.4	39.8	5.1
Queue Delay	0.0	0.0	3.0	0.0	0.0	0.0
Total Delay	46.8	8.7	16.6	0.4	39.8	5.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS	D	A	B	A	D	A
Approach Delay	38.3		13.5			7.3
Approach LOS	D		B			A
Queue Length 50th (ft)	137	0	114	1	30	72
Queue Length 95th (ft)	177	46	m311	m0	68	119
Internal Link Dist (ft)	831		344			379
Turn Bay Length (ft)	490	325		130	220	
Base Capacity (vph)	892	504	1908	1392	249	2615
Starvation Cap Reductn	0	0	766	0	0	0
Spillback Cap Reductn	0	0	0	0	0	56
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.25	0.88	0.17	0.22	0.30

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 85 (85%), Referenced to phase 2:NBSB and 6:, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 16.8 Intersection LOS: B
Intersection Capacity Utilization 54.3% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Route 229 & Broad Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	575	350	30	720	170	325	705	20	215	480	415
Future Volume (vph)	270	575	350	30	720	170	325	705	20	215	480	415
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	525		765	65		300	525		0	200		275
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (ft)	150			135			90			75		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850			0.850		0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	1770	3539	1583	1770	3525	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1863	1583	1770	3539	1583	1770	3525	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			360			94		2				140
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		918			774			907			424	
Travel Time (s)		20.9			17.6			20.6			9.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	293	625	380	33	783	185	353	766	22	234	522	451
Shared Lane Traffic (%)												
Lane Group Flow (vph)	293	625	380	33	783	185	353	788	0	234	522	451
Turn Type	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA		Prot	NA	pt+ov
Protected Phases	7	4	4 1	3	8	5 8	1	6		5	2	2 7
Permitted Phases												
Detector Phase	7	4	4 1	3	8	5 8	1	6		5	2	2 7
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	15.0		6.0	15.0	
Minimum Split (s)	11.2	28.4		10.0	28.4		10.0	21.4		10.0	21.4	
Total Split (s)	18.0	25.0		18.0	25.0		34.0	23.0		34.0	23.0	
Total Split (%)	18.0%	25.0%		18.0%	25.0%		34.0%	23.0%		34.0%	23.0%	
Maximum Green (s)	12.8	19.6		14.0	19.6		30.0	16.6		30.0	16.6	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	4.9		3.0	4.9	
All-Red Time (s)	2.2	1.7		1.0	1.7		1.0	1.5		1.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.4		4.0	5.4		4.0	6.4		4.0	6.4	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	3.0		2.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)		22.0			22.0							
Flash Dont Walk (s)		1.0			1.0							
Pedestrian Calls (#/hr)		0			0							
Act Effct Green (s)	11.8	30.8	59.5	6.9	20.7	52.0	24.8	16.6		30.0	21.8	38.8
Actuated g/C Ratio	0.12	0.31	0.60	0.07	0.21	0.52	0.25	0.17		0.30	0.22	0.39
v/c Ratio	0.73	1.09	0.35	0.27	1.07	0.21	0.81	1.34		0.44	0.68	0.65
Control Delay	53.5	100.3	2.2	49.5	93.1	3.9	49.5	200.7		36.8	48.5	30.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9		0.0	0.0	0.9
Total Delay	53.5	100.3	2.2	49.5	93.1	4.0	49.5	201.6		36.8	48.5	31.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	F	A	D	F	A	D	F		D	D	C
Approach Delay		61.0			75.2			154.6			39.8	
Approach LOS		E			E			F			D	
Queue Length 50th (ft)	93	~495	5	21	~306	14	209	~349		137	174	212
Queue Length 95th (ft)	137	#738	42	50	#425	32	296	#472		212	#271	322
Internal Link Dist (ft)		838			694			827			344	
Turn Bay Length (ft)	525		765	65		300	525			200		275
Base Capacity (vph)	439	573	1152	247	731	869	531	586		531	771	714
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	90
Spillback Cap Reductn	0	0	0	0	0	26	0	65		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.67	1.09	0.33	0.13	1.07	0.22	0.66	1.51		0.44	0.68	0.72

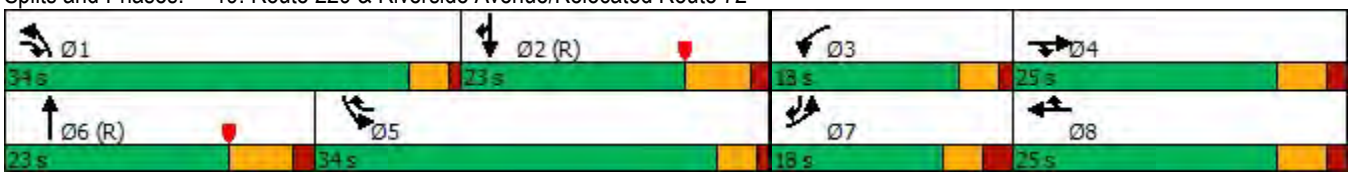
Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 42 (42%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.34
Intersection Signal Delay: 81.5 Intersection LOS: F
Intersection Capacity Utilization 83.8% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 19: Route 229 & Riverside Avenue/Relocated Route 72



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	485	250	170	790	125	485	845	240	125	650	85
Future Volume (vph)	75	485	250	170	790	125	485	845	240	125	650	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	240		240	400		0	145		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	150			150			70			90		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.949			0.979			0.967			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3359	0	1770	3465	0	1770	3422	0	1770	3479	0
Flt Permitted	0.153			0.152			0.320			0.320		
Satd. Flow (perm)	285	3359	0	283	3465	0	596	3422	0	596	3479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		58			11			28			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		669			802			666			907	
Travel Time (s)		15.2			18.2			15.1			20.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	527	272	185	859	136	527	918	261	136	707	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	799	0	185	995	0	527	1179	0	136	799	0
Turn Type	pm+pt	NA		pm+pt	NA		D.P+P	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1 2	2 5		1	5	
Permitted Phases	4			8			5			5		
Detector Phase	7	4		3	8		1 2	2 5		1	5	
Switch Phase												
Minimum Initial (s)	4.0	7.0		4.0	7.0					4.0	15.0	
Minimum Split (s)	8.2	13.0		8.0	13.0					8.0	22.3	
Total Split (s)	12.0	30.0		12.0	30.0					10.0	23.0	
Total Split (%)	8.8%	21.9%		8.8%	21.9%					7.3%	16.8%	
Maximum Green (s)	7.8	24.0		8.0	24.0					6.0	15.7	
Yellow Time (s)	3.2	3.8		3.0	3.8					3.0	4.9	
All-Red Time (s)	1.0	2.2		1.0	2.2					1.0	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0					0.0	0.0	
Total Lost Time (s)	4.2	6.0		4.0	6.0					4.0	7.3	
Lead/Lag	Lead	Lag		Lead	Lag					Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0					2.0	3.0	
Recall Mode	None	None		None	None					None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	52.2	43.1		64.6	51.8		52.2	44.0		27.2	15.7	
Actuated g/C Ratio	0.38	0.31		0.47	0.38		0.38	0.32		0.20	0.11	
v/c Ratio	0.44	0.73		0.60	0.76		1.03	1.05		0.72	1.97	
Control Delay	32.7	43.5		35.2	41.6		82.7	86.1		54.5	476.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	32.7	43.5		35.2	41.6		82.7	86.1		54.5	476.9	

Lane Group	Ø2	Ø6
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	6
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	4.0	1.0
Minimum Split (s)	8.0	37.0
Total Split (s)	25.0	37.0
Total Split (%)	18%	27%
Maximum Green (s)	21.0	33.0
Yellow Time (s)	3.0	4.0
All-Red Time (s)	1.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	2.0	3.0
Recall Mode	Min	None
Walk Time (s)		7.0
Flash Dont Walk (s)		26.0
Pedestrian Calls (#/hr)		5
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	D		D	D		F	F		D	F	
Approach Delay		42.5			40.6			85.0			415.4	
Approach LOS		D			D			F			F	
Queue Length 50th (ft)	35	288		84	367		~402	~594		76	~582	
Queue Length 95th (ft)	100	#578		#302	#807		#679	#735		#179	#714	
Internal Link Dist (ft)		589			722			586			827	
Turn Bay Length (ft)	200			240			400			145		
Base Capacity (vph)	197	1095		310	1317		512	1118		189	405	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.42	0.73		0.60	0.76		1.03	1.05		0.72	1.97	

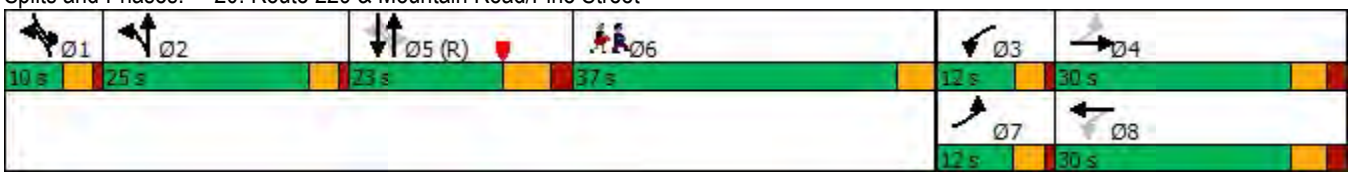
Intersection Summary

Area Type: Other
Cycle Length: 137
Actuated Cycle Length: 137
Offset: 52 (38%), Referenced to phase 5:NBSB, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.97
Intersection Signal Delay: 131.6 Intersection LOS: F
Intersection Capacity Utilization 96.1% ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: Route 229 & Mountain Road/Pine Street



Lane Group	Ø2	Ø6
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	10	20	10	10	5	35	1320	60	5	815	255
Future Volume (vph)	240	10	20	10	10	5	35	1320	60	5	815	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	130		0	70		0	55		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			25			50			70		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.977			0.953			0.993			0.964	
Flt Protected	0.950	0.963		0.950			0.950			0.950		
Satd. Flow (prot)	1681	1665	0	1770	1775	0	1770	3514	0	1770	3412	0
Flt Permitted	0.950	0.963		0.950			0.183			0.120		
Satd. Flow (perm)	1681	1665	0	1770	1775	0	341	3514	0	224	3412	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			5			3			26	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		650			212			757			666	
Travel Time (s)		14.8			4.8			17.2			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	11	22	11	11	5	38	1435	65	5	886	277
Shared Lane Traffic (%)	43%											
Lane Group Flow (vph)	149	145	0	11	16	0	38	1500	0	5	1163	0
Turn Type	Split	NA		Split	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	4	4		8	8		1	6		5	2	
Permitted Phases							6			2		
Detector Phase	4	4		8	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	11.5	11.5		10.8	10.8		9.0	21.7		9.0	21.7	
Total Split (s)	30.0	30.0		30.0	30.0		15.0	55.0		15.0	55.0	
Total Split (%)	18.6%	18.6%		18.6%	18.6%		9.3%	34.2%		9.3%	34.2%	
Maximum Green (s)	24.5	24.5		25.2	25.2		11.0	48.3		11.0	48.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	4.9		3.0	4.9	
All-Red Time (s)	2.5	2.5		1.8	1.8		1.0	1.8		1.0	1.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		4.8	4.8		4.0	6.7		4.0	6.7	
Lead/Lag	Lag	Lag					Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	18.4	18.4		6.4	6.4		119.6	115.3		116.7	109.4	
Actuated g/C Ratio	0.11	0.11		0.04	0.04		0.74	0.72		0.72	0.68	
v/c Ratio	0.78	0.75		0.16	0.22		0.12	0.60		0.02	0.50	
Control Delay	94.8	88.8		79.5	64.3		11.3	17.4		12.8	17.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.5	
Total Delay	94.8	88.8		79.5	64.3		11.3	17.4		12.8	18.2	

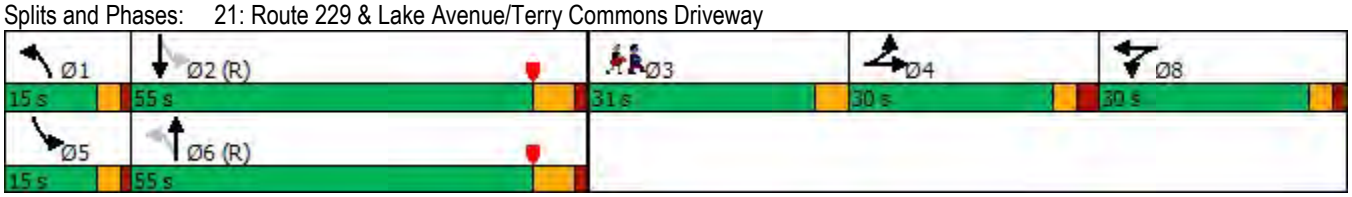
Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	19%
Maximum Green (s)	27.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	F		E	E		B	B		B	B	
Approach Delay		91.8			70.5			17.2			18.2	
Approach LOS		F			E			B			B	
Queue Length 50th (ft)	163	152		11	12		9	340		1	282	
Queue Length 95th (ft)	241	229		34	39		40	#975		10	634	
Internal Link Dist (ft)		570			132			677			586	
Turn Bay Length (ft)	200			130			70			55		
Base Capacity (vph)	255	257		277	282		351	2517		272	2326	
Starvation Cap Reductn	0	0		0	0		0	0		0	660	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.58	0.56		0.04	0.06		0.11	0.60		0.02	0.70	

Intersection Summary

Area Type: Other
Cycle Length: 161
Actuated Cycle Length: 161
Offset: 42 (26%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 125
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 25.3 Intersection LOS: C
Intersection Capacity Utilization 62.7% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 21: Route 229 & Lake Avenue/Terry Commons Driveway



Lane Group	Ø3
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	20	35	35	10	130	60	1265	35	25	800	35
Future Volume (vph)	35	20	35	35	10	130	60	1265	35	25	800	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		175	60		0	180		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			75			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.948				0.850		0.996			0.994	
Flt Protected		0.981			0.963		0.950			0.950		
Satd. Flow (prot)	0	1732	0	0	1794	1583	1770	3525	0	1770	3518	0
Flt Permitted		0.852			0.635		0.238			0.148		
Satd. Flow (perm)	0	1505	0	0	1183	1583	443	3525	0	276	3518	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38				141		5			8	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		674			483			840			981	
Travel Time (s)		15.3			11.0			14.3			22.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	22	38	38	11	141	65	1375	38	27	870	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	98	0	0	49	141	65	1413	0	27	908	0
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		7			4 7		5	2		1	6	
Permitted Phases	7			4 7		4 7	2			6		
Detector Phase	7	7		4 7	4 7	4 7	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0					5.0	15.0		5.0	15.0	
Minimum Split (s)	10.8	10.8					9.0	21.1		9.0	21.1	
Total Split (s)	11.0	11.0					9.0	29.0		9.0	29.0	
Total Split (%)	18.3%	18.3%					15.0%	48.3%		15.0%	48.3%	
Maximum Green (s)	5.2	5.2					5.0	22.9		5.0	22.9	
Yellow Time (s)	3.0	3.0					3.0	4.2		3.0	4.2	
All-Red Time (s)	2.8	2.8					1.0	1.9		1.0	1.9	
Lost Time Adjust (s)		0.0					0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.8					4.0	6.1		4.0	6.1	
Lead/Lag	Lag	Lag					Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0					2.0	0.2		2.0	0.2	
Recall Mode	None	None					None	C-Max		None	C-Max	
Walk Time (s)	24.0	24.0										
Flash Dont Walk (s)	1.0	1.0										
Pedestrian Calls (#/hr)	0	0										
Act Effct Green (s)		5.2			14.7	14.7	36.8	33.9		36.0	32.1	
Actuated g/C Ratio		0.09			0.24	0.24	0.61	0.56		0.60	0.54	
v/c Ratio		0.60			0.17	0.29	0.17	0.71		0.09	0.48	
Control Delay		35.6			18.0	5.4	4.8	13.2		6.6	13.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		35.6			18.0	5.4	4.8	13.2		6.6	13.6	

Lane Group	Ø4
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	4
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	12.1
Total Split (s)	11.0
Total Split (%)	18%
Maximum Green (s)	5.9
Yellow Time (s)	3.0
All-Red Time (s)	2.1
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		D			B	A	A	B		A	B	
Approach Delay		35.6			8.6			12.8			13.4	
Approach LOS		D			A			B			B	
Queue Length 50th (ft)		21			13	0	6	73		4	137	
Queue Length 95th (ft)		#80			36	34	m8	m#343		12	195	
Internal Link Dist (ft)		594			403			760			901	
Turn Bay Length (ft)						175	60			180		
Base Capacity (vph)		165			290	494	382	1995		290	1887	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.59			0.17	0.29	0.17	0.71		0.09	0.48	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 30 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 13.6 Intersection LOS: B
Intersection Capacity Utilization 65.3% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Route 229 & Battisto Road/Business Park Drive

Lane Group	Ø4
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	150	55	110	120	110	40	980	90	190	660	60
Future Volume (vph)	190	150	55	110	120	110	40	980	90	190	660	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	14	12
Storage Length (ft)	125		0	160		0	160		0	235		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			100			250		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.960			0.928			0.987			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1788	0	1770	1729	0	1770	3493	0	1770	3730	0
Flt Permitted	0.530			0.579			0.356			0.208		
Satd. Flow (perm)	987	1788	0	1079	1729	0	663	3493	0	387	3730	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			80			15			24	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		744			601			1500			891	
Travel Time (s)		16.9			13.7			25.6			15.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	163	60	120	130	120	43	1065	98	207	717	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	207	223	0	120	250	0	43	1163	0	207	782	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4			2			1 2		
Detector Phase	4	4		4	4		2	2		1	1 2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		5.0		
Minimum Split (s)	29.3	29.3		29.3	29.3		23.3	23.3		9.0		
Total Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		12.0		
Total Split (%)	40.0%	40.0%		40.0%	40.0%		40.0%	40.0%		20.0%		
Maximum Green (s)	18.7	18.7		18.7	18.7		15.7	15.7		8.0		
Yellow Time (s)	3.6	3.6		3.6	3.6		4.3	4.3		3.0		
All-Red Time (s)	1.7	1.7		1.7	1.7		4.0	4.0		1.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		
Total Lost Time (s)	5.3	5.3		5.3	5.3		8.3	8.3		4.0		
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		1.0		
Recall Mode	None	None		None	None		C-Max	C-Max		None		
Walk Time (s)	23.0	23.0		23.0	23.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	15.4	15.4		15.4	15.4		19.2	19.2		31.3	35.3	
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.32	0.32		0.52	0.59	
v/c Ratio	0.82	0.46		0.43	0.50		0.20	1.03		0.54	0.35	
Control Delay	46.5	18.3		22.5	15.3		13.5	54.0		22.5	2.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	46.5	18.3		22.5	15.3		13.5	54.0		22.5	2.1	
LOS	D	B		C	B		B	D		C	A	
Approach Delay		31.8			17.7			52.6			6.4	
Approach LOS		C			B			D			A	
Queue Length 50th (ft)	65	54		34	47		7	~289		31	15	
Queue Length 95th (ft)	#154	104		73	100		m16	#279		m91	22	
Internal Link Dist (ft)		664			521			1420			811	
Turn Bay Length (ft)	125			160			160			235		
Base Capacity (vph)	307	579		336	593		212	1128		393	2178	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.67	0.39		0.36	0.42		0.20	1.03		0.53	0.36	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 54 (90%), Referenced to phase 2:NBSB and 6:, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 30.0	Intersection LOS: C
Intersection Capacity Utilization 83.1%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

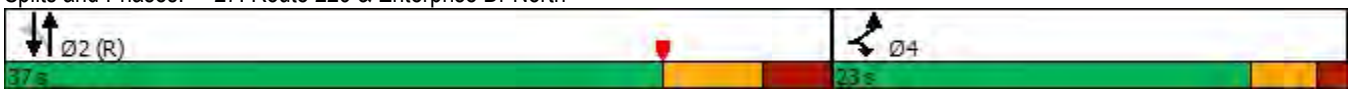
Splits and Phases: 25: Route 229 & Cross Street/Redstone Hill Road

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	180	65	90	930	715	45
Future Volume (vph)	180	65	90	930	715	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	12	12
Grade (%)	0%			6%	0%	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850			0.991	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1770	1794	0	3419	3507	0
Flt Permitted	0.950			0.778		
Satd. Flow (perm)	1770	1794	0	2671	3507	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		71			15	
Link Speed (mph)	30			40	40	
Link Distance (ft)	411			1591	1500	
Travel Time (s)	9.3			27.1	25.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	71	98	1011	777	49
Shared Lane Traffic (%)						
Lane Group Flow (vph)	196	71	0	1109	826	0
Turn Type	Prot	Prot	Perm	NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases			2		2	
Detector Phase	4	4	2	2	2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	15.0	15.0	15.0	
Minimum Split (s)	20.4	20.4	22.6	22.6	22.6	
Total Split (s)	23.0	23.0	37.0	37.0	37.0	
Total Split (%)	38.3%	38.3%	61.7%	61.7%	61.7%	
Maximum Green (s)	18.6	18.6	29.4	29.4	29.4	
Yellow Time (s)	3.0	3.0	4.4	4.4	4.4	
All-Red Time (s)	1.4	1.4	3.2	3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.4	4.4		7.6	7.6	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	0.2	0.2	0.2	
Recall Mode	None	None	C-Min	C-Min	C-Min	
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	10.1	10.1		37.9	37.9	
Actuated g/C Ratio	0.17	0.17		0.63	0.63	
v/c Ratio	0.66	0.20		0.66	0.37	
Control Delay	33.4	7.1		6.3	3.7	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	33.4	7.1		6.3	3.7	
LOS	C	A		A	A	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach Delay	26.4			6.3	3.7	
Approach LOS	C			A	A	
Queue Length 50th (ft)	67	0		25	35	
Queue Length 95th (ft)	113	26		m87	50	
Internal Link Dist (ft)	331			1511	1420	
Turn Bay Length (ft)						
Base Capacity (vph)	548	605		1686	2219	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.36	0.12		0.66	0.37	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 32 (53%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 7.7	Intersection LOS: A
Intersection Capacity Utilization 75.8%	ICU Level of Service D
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 27: Route 229 & Enterprise Dr North



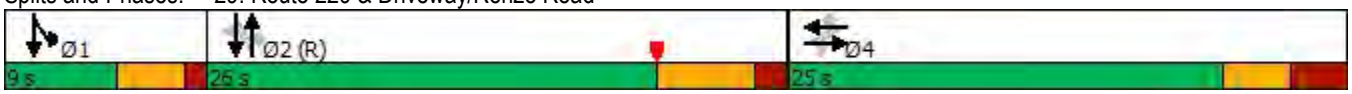
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	275	0	85	0	930	350	55	770	0
Future Volume (vph)	0	0	0	275	0	85	0	930	350	55	770	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			7%			6%	
Storage Length (ft)	0		0	0		300	280		130	165		165
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt						0.850			0.850			
Flt Protected					0.950					0.950		
Satd. Flow (prot)	0	1863	0	0	1770	1583	1798	3415	1528	1717	3433	0
Flt Permitted					0.757					0.182		
Satd. Flow (perm)	0	1863	0	0	1410	1583	1798	3415	1528	329	3433	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						125			380			
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		261			414			713			1591	
Travel Time (s)		5.9			9.4			12.2			27.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	299	0	92	0	1011	380	60	837	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	299	92	0	1011	380	60	837	0
Turn Type				Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases		4			4			2		1	1 2	
Permitted Phases	4			4		4	2		2	1 2		
Detector Phase	4	4		4	4	4	2	2	2	1	1 2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	15.0	15.0	15.0	5.0		
Minimum Split (s)	30.6	30.6		30.6	30.6	30.6	20.9	20.9	20.9	9.0		
Total Split (s)	25.0	25.0		25.0	25.0	25.0	26.0	26.0	26.0	9.0		
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	43.3%	43.3%	43.3%	15.0%		
Maximum Green (s)	19.4	19.4		19.4	19.4	19.4	20.1	20.1	20.1	5.0		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.4	4.4	4.4	3.0		
All-Red Time (s)	2.6	2.6		2.6	2.6	2.6	1.5	1.5	1.5	1.0		
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		5.6			5.6	5.6	5.9	5.9	5.9	4.0		
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	0.2	0.2	0.2	1.0		
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	None		
Walk Time (s)	24.0	24.0		24.0	24.0	24.0						
Flash Dont Walk (s)	1.0	1.0		1.0	1.0	1.0						
Pedestrian Calls (#/hr)	0	0		0	0	0						
Act Effct Green (s)					15.5	15.5		22.1	22.1	30.9	34.9	
Actuated g/C Ratio					0.26	0.26		0.37	0.37	0.52	0.58	
v/c Ratio					0.82	0.18		0.80	0.47	0.18	0.42	
Control Delay					39.7	2.9		21.0	5.9	4.4	5.2	
Queue Delay					0.0	0.0		0.0	0.0	0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay					39.7	2.9		21.0	5.9	4.4	5.2	
LOS					D	A		C	A	A	A	
Approach Delay					31.0			16.9			5.1	
Approach LOS					C			B			A	
Queue Length 50th (ft)					99	0		97	18	7	55	
Queue Length 95th (ft)					#174	17		#272	70	5	20	
Internal Link Dist (ft)		181			334			633			1511	
Turn Bay Length (ft)						300			130	165		
Base Capacity (vph)					455	596		1257	802	330	1999	
Starvation Cap Reductn					0	0		0	0	0	0	
Spillback Cap Reductn					0	0		0	0	0	0	
Storage Cap Reductn					0	0		0	0	0	0	
Reduced v/c Ratio					0.66	0.15		0.80	0.47	0.18	0.42	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 58 (97%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 15.0	Intersection LOS: B
Intersection Capacity Utilization 61.9%	ICU Level of Service B
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 29: Route 229 & Driveway/Ronzo Road

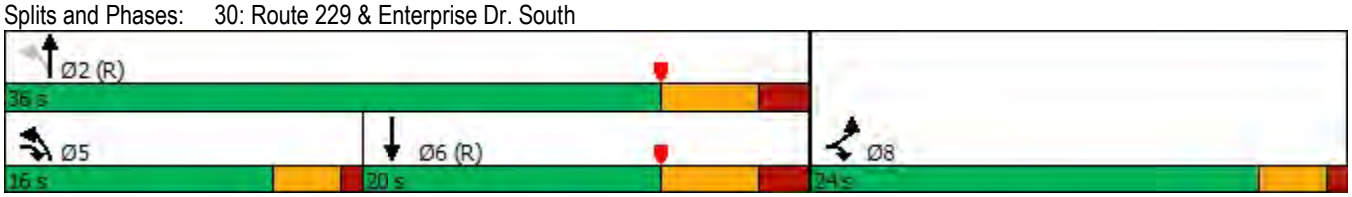


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	30	95	110	1255	925	35
Future Volume (vph)	30	95	110	1255	925	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			7%	7%	
Storage Length (ft)	0	0	745			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.995	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1708	3415	3398	0
Flt Permitted	0.950		0.204			
Satd. Flow (perm)	1770	1583	367	3415	3398	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		2			6	
Link Speed (mph)	30			40	40	
Link Distance (ft)	703			1424	713	
Travel Time (s)	16.0			24.3	12.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	103	120	1364	1005	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	103	120	1364	1043	0
Turn Type	Prot	pt+ov	pm+pt	NA	NA	
Protected Phases	8	8 5	5	2	6	
Permitted Phases			2			
Detector Phase	8	8 5	5	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	24.0		9.0	21.7	21.7	
Total Split (s)	24.0		16.0	36.0	20.0	
Total Split (%)	40.0%		26.7%	60.0%	33.3%	
Maximum Green (s)	20.0		12.0	29.3	13.3	
Yellow Time (s)	3.0		3.0	4.4	4.4	
All-Red Time (s)	1.0		1.0	2.3	2.3	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0		4.0	6.7	6.7	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	C-Min	C-Min	
Walk Time (s)	19.0					
Flash Dont Walk (s)	1.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	8.3	17.2	45.6	44.2	35.3	
Actuated g/C Ratio	0.14	0.29	0.76	0.74	0.59	
v/c Ratio	0.13	0.23	0.28	0.54	0.52	
Control Delay	22.8	14.8	5.7	2.9	5.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Delay	22.8	14.8	5.7	2.9	5.3	
LOS	C	B	A	A	A	
Approach Delay	16.7			3.1	5.3	
Approach LOS	B			A	A	
Queue Length 50th (ft)	11	26	1	6	67	
Queue Length 95th (ft)	30	50	m4	m65	101	
Internal Link Dist (ft)	623			1344	633	
Turn Bay Length (ft)			745			
Base Capacity (vph)	590	635	547	2517	2002	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.06	0.16	0.22	0.54	0.52	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay: 4.7	Intersection LOS: A
Intersection Capacity Utilization 49.2%	ICU Level of Service A
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 30: Route 229 & Enterprise Dr. South



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	90	130	1230	35	25	1055
Future Volume (vph)	90	130	1230	35	25	1055
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			7%
Storage Length (ft)	0	0		105	95	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3539	1583	1708	3415
Flt Permitted	0.950				0.157	
Satd. Flow (perm)	1770	1583	3539	1583	282	3415
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		141		25		
Link Speed (mph)	30		40			40
Link Distance (ft)	370		539			1424
Travel Time (s)	8.4		9.2			24.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	141	1337	38	27	1147
Shared Lane Traffic (%)						
Lane Group Flow (vph)	98	141	1337	38	27	1147
Turn Type	Prot	Prot	NA	Prot	pm+pt	NA
Protected Phases	4	4	2	2	1	1 2
Permitted Phases					1 2	
Detector Phase	4	4	2	2	1	1 2
Switch Phase						
Minimum Initial (s)	5.0	5.0	14.0	14.0	4.0	
Minimum Split (s)	22.1	22.1	20.8	20.8	8.0	
Total Split (s)	24.0	24.0	27.0	27.0	9.0	
Total Split (%)	40.0%	40.0%	45.0%	45.0%	15.0%	
Maximum Green (s)	19.9	19.9	20.2	20.2	5.0	
Yellow Time (s)	3.0	3.0	4.4	4.4	3.0	
All-Red Time (s)	1.1	1.1	2.4	2.4	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.1	4.1	6.8	6.8	4.0	
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	5.0	5.0	2.0	
Recall Mode	None	None	C-Min	C-Min	None	
Walk Time (s)	17.0	17.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	7.8	7.8	26.2	26.2	41.9	46.7
Actuated g/C Ratio	0.13	0.13	0.44	0.44	0.70	0.78
v/c Ratio	0.42	0.43	0.86	0.05	0.05	0.43
Control Delay	29.0	9.2	24.5	4.5	1.7	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	29.0	9.2	24.5	4.5	1.7	1.1
LOS	C	A	C	A	A	A
Approach Delay	17.3		24.0			1.2
Approach LOS	B		C			A
Queue Length 50th (ft)	33	0	~302	3	1	11
Queue Length 95th (ft)	68	40	#450	m10	m2	22
Internal Link Dist (ft)	290		459			1344
Turn Bay Length (ft)				105	95	
Base Capacity (vph)	587	619	1546	705	502	2656
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.23	0.86	0.05	0.05	0.43

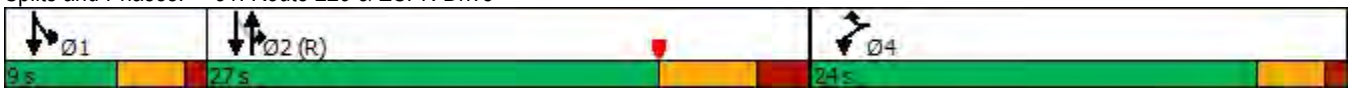
Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 30 (50%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 13.8	Intersection LOS: B
Intersection Capacity Utilization 51.1%	ICU Level of Service A
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 31: Route 229 & ESPN Drive



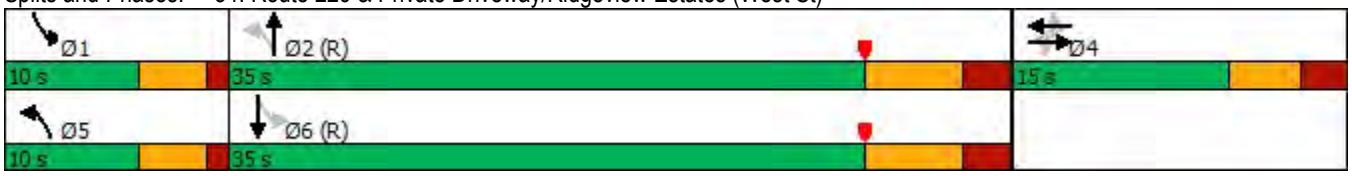
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	0	5	20	0	5	40	1245	25	30	1080	35
Future Volume (vph)	20	0	5	20	0	5	40	1245	25	30	1080	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		50	0		120	120		0	135		0
Storage Lanes	0		0	1		1	1		0	1		0
Taper Length (ft)	25			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.850			0.850			0.997			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1583	0	1770	3529	0	1770	1853	0
Flt Permitted	0.833			0.833			0.108			0.149		
Satd. Flow (perm)	1552	1583	0	1552	1583	0	201	3529	0	278	1853	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		222			209			4			4	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		299			498			1447			922	
Travel Time (s)		6.8			11.3			24.7			15.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	0	5	22	0	5	43	1353	27	33	1174	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	5	0	22	5	0	43	1380	0	33	1212	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4			2			6		
Detector Phase	4	4		4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	13.4	13.4		13.4	13.4		9.0	21.6		9.0	21.6	
Total Split (s)	15.0	15.0		15.0	15.0		10.0	35.0		10.0	35.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		16.7%	58.3%		16.7%	58.3%	
Maximum Green (s)	9.6	9.6		9.6	9.6		6.0	28.4		6.0	28.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.1	2.1		2.1	2.1		1.0	2.2		1.0	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	5.4		5.4	5.4		4.0	6.6		4.0	6.6	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	0.2		1.5	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	8.0	8.0		8.0	8.0		46.4	44.4		46.3	44.4	
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.77	0.74		0.77	0.74	
v/c Ratio	0.11	0.01		0.11	0.01		0.15	0.53		0.10	0.88	
Control Delay	24.4	0.0		24.4	0.0		2.1	3.1		1.7	23.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	24.4	0.0		24.4	0.0		2.1	3.1		1.7	23.8	
LOS	C	A		C	A		A	A		A	C	
Approach Delay		19.8			19.8			3.1			23.2	
Approach LOS		B			B			A			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	7	0		7	0		3	52		1	379	
Queue Length 95th (ft)	25	0		25	0		m3	m62		m2	#842	
Internal Link Dist (ft)		219			418			1367			842	
Turn Bay Length (ft)	50						120			135		
Base Capacity (vph)	248	439		248	428		313	2612		365	1371	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.01		0.09	0.01		0.14	0.53		0.09	0.88	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 59 (98%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 12.6 Intersection LOS: B
Intersection Capacity Utilization 76.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 34: Route 229 & Private Driveway/Ridgeview Estates (West St)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	10	125	95	130	80	65	1055	185	140	935	15
Future Volume (vph)	175	10	125	95	130	80	65	1055	185	140	935	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	80		0	125		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.946			0.943			0.978			0.998	
Flt Protected		0.973		0.950			0.950			0.950		
Satd. Flow (prot)	0	1715	0	1770	1757	0	1770	3461	0	1770	1859	0
Flt Permitted		0.617		0.580			0.137			0.131		
Satd. Flow (perm)	0	1087	0	1080	1757	0	255	3461	0	244	1859	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47			43			44			2	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		906			1161			1141			1447	
Travel Time (s)		20.6			26.4			19.4			24.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	11	136	103	141	87	71	1147	201	152	1016	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	337	0	103	228	0	71	1348	0	152	1032	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Detector Phase	4	4		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	25.4	25.4		25.4	25.4		9.0	22.1		9.0	22.1	
Total Split (s)	15.0	15.0		15.0	15.0		11.0	35.0		10.0	34.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		18.3%	58.3%		16.7%	56.7%	
Maximum Green (s)	8.6	8.6		8.6	8.6		7.0	27.9		6.0	26.9	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	2.7		1.0	2.7	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.4		6.4	6.4		4.0	7.1		4.0	7.1	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	0.2		2.0	0.2	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	18.0	18.0		18.0	18.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		8.6		8.6	8.6		37.5	30.0		38.8	32.1	
Actuated g/C Ratio		0.14		0.14	0.14		0.62	0.50		0.65	0.54	
v/c Ratio		1.72		0.67	0.79		0.24	0.77		0.50	1.04	
Control Delay		366.0		49.1	42.7		5.1	14.7		12.2	49.0	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		366.0		49.1	42.7		5.1	14.7		12.2	49.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		F		D	D		A	B		B	D	
Approach Delay		366.0			44.7			14.2			44.3	
Approach LOS		F			D			B			D	
Queue Length 50th (ft)		~173		36	65		8	141		10	~482	
Queue Length 95th (ft)		#316		#103	#169		m10	m166		m18	m#611	
Internal Link Dist (ft)		826			1081			1061			1367	
Turn Bay Length (ft)							80			125		
Base Capacity (vph)		196		154	288		341	1751		310	995	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		1.72		0.67	0.79		0.21	0.77		0.49	1.04	

Intersection Summary

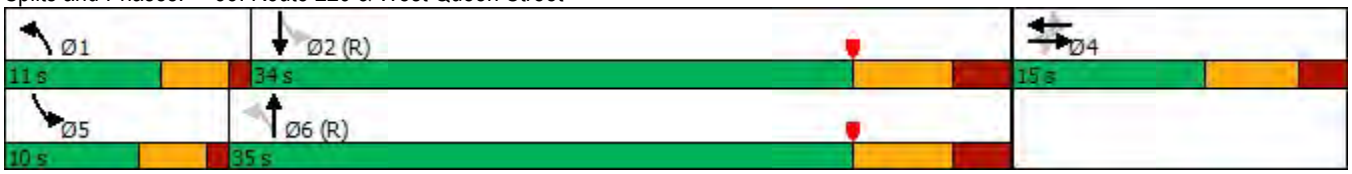
Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 33 (55%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.72
Intersection Signal Delay: 64.4 Intersection LOS: E
Intersection Capacity Utilization 103.8% ICU Level of Service G
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 35: Route 229 & West Queen Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	66	110	1275	1045	120
Future Volume (vph)	35	66	110	1275	1045	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt		0.850			0.986	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1770	1583	0	3525	1837	0
Flt Permitted	0.950			0.543		
Satd. Flow (perm)	1770	1583	0	1922	1837	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		72			14	
Link Speed (mph)	30			40	40	
Link Distance (ft)	745			2535	1141	
Travel Time (s)	16.9			43.2	19.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	72	120	1386	1136	130
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	72	0	1506	1266	0
Turn Type	Prot	Perm	D.P+P	NA	NA	
Protected Phases	4		1	1 2	2	
Permitted Phases		4	2			
Detector Phase	4	4	1	1 2	2	
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		15.0	
Minimum Split (s)	30.0	30.0	8.0		24.8	
Total Split (s)	15.0	15.0	8.0		37.0	
Total Split (%)	25.0%	25.0%	13.3%		61.7%	
Maximum Green (s)	11.0	11.0	4.0		30.2	
Yellow Time (s)	3.0	3.0	3.0		4.4	
All-Red Time (s)	1.0	1.0	1.0		2.4	
Lost Time Adjust (s)	0.0	0.0			0.0	
Total Lost Time (s)	4.0	4.0			6.8	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	None	None	Max		C-Max	
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	7.4	7.4		42.8	30.2	
Actuated g/C Ratio	0.12	0.12		0.71	0.50	
v/c Ratio	0.17	0.28		0.92	1.36	
Control Delay	25.3	10.1		19.8	182.5	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	25.3	10.1		19.8	182.5	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
LOS	C	B		B	F	
Approach Delay	15.4			19.8	182.5	
Approach LOS	B			B	F	
Queue Length 50th (ft)	13	0		87	~606	
Queue Length 95th (ft)	35	30		#247	m#549	
Internal Link Dist (ft)	665			2455	1061	
Turn Bay Length (ft)		100				
Base Capacity (vph)	324	349		1631	931	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.12	0.21		0.92	1.36	

Intersection Summary

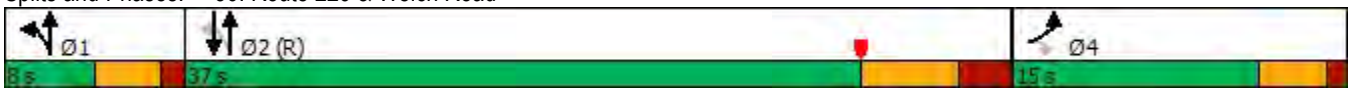
Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 34 (57%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.36
Intersection Signal Delay: 91.1 Intersection LOS: F
Intersection Capacity Utilization 118.9% ICU Level of Service H
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 36: Route 229 & Welch Road

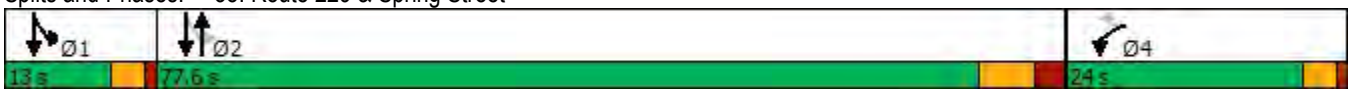


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	45	65	1320	55	145	970
Future Volume (vph)	45	65	1320	55	145	970
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		7%			0%
Storage Length (ft)	0	95		0	205	
Storage Lanes	1	1		0	1	
Taper Length (ft)	100				180	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt		0.850	0.994			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3395	0	1770	1863
Flt Permitted	0.950				0.130	
Satd. Flow (perm)	1770	1583	3395	0	242	1863
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		71	7			
Link Speed (mph)	30		40			40
Link Distance (ft)	911		3080			2535
Travel Time (s)	20.7		52.5			43.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	71	1435	60	158	1054
Shared Lane Traffic (%)						
Lane Group Flow (vph)	49	71	1495	0	158	1054
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	4		2		1	1 2
Permitted Phases		4			1 2	
Detector Phase	4	4	2		1	1 2
Switch Phase						
Minimum Initial (s)	9.0	9.0	25.0		5.0	
Minimum Split (s)	20.0	20.0	32.6		9.0	
Total Split (s)	24.0	24.0	77.6		13.0	
Total Split (%)	20.9%	20.9%	67.7%		11.3%	
Maximum Green (s)	20.0	20.0	70.0		9.0	
Yellow Time (s)	3.0	3.0	4.9		3.0	
All-Red Time (s)	1.0	1.0	2.7		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0	7.6		4.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	4.0		2.0	
Recall Mode	None	None	Min		Min	
Walk Time (s)	15.0	15.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	9.6	9.6	67.8		80.4	85.5
Actuated g/C Ratio	0.10	0.10	0.69		0.81	0.86
v/c Ratio	0.29	0.33	0.64		0.47	0.65
Control Delay	48.8	15.2	11.0		8.2	5.5
Queue Delay	0.0	0.0	0.0		0.0	0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	48.8	15.2	11.0		8.2	5.5
LOS	D	B	B		A	A
Approach Delay	28.9		11.0			5.9
Approach LOS	C		B			A
Queue Length 50th (ft)	31	0	268		13	186
Queue Length 95th (ft)	68	42	360		40	332
Internal Link Dist (ft)	831		3000			2455
Turn Bay Length (ft)		95			205	
Base Capacity (vph)	362	380	2439		337	1593
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.14	0.19	0.61		0.47	0.66

Intersection Summary	
Area Type: Other	
Cycle Length: 114.6	
Actuated Cycle Length: 98.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 9.5	Intersection LOS: A
Intersection Capacity Utilization 66.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 38: Route 229 & Spring Street



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	105	80	1295	120	120	890
Future Volume (vph)	105	80	1295	120	120	890
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	12	12	12	12
Grade (%)	0%		0%			7%
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.942		0.987			
Flt Protected	0.972					0.994
Satd. Flow (prot)	1819	0	3493	0	0	1787
Flt Permitted	0.972					0.534
Satd. Flow (perm)	1819	0	3493	0	0	960
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	39		23			
Link Speed (mph)	30		40			40
Link Distance (ft)	335		424			3080
Travel Time (s)	7.6		7.2			52.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	87	1408	130	130	967
Shared Lane Traffic (%)						
Lane Group Flow (vph)	201	0	1538	0	0	1097
Turn Type	Prot		NA		Perm	NA
Protected Phases	4		2			2
Permitted Phases					2	
Detector Phase	4		2		2	2
Switch Phase						
Minimum Initial (s)	9.0		15.0		15.0	15.0
Minimum Split (s)	23.0		21.3		21.3	21.3
Total Split (s)	24.0		46.3		46.3	46.3
Total Split (%)	34.1%		65.9%		65.9%	65.9%
Maximum Green (s)	20.0		40.0		40.0	40.0
Yellow Time (s)	3.0		4.6		4.6	4.6
All-Red Time (s)	1.0		1.7		1.7	1.7
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	4.0		6.3			6.3
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.5		2.5		2.5	2.5
Recall Mode	None		Min		Min	Min
Walk Time (s)	18.0					
Flash Dont Walk (s)	1.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	10.6		42.8			42.8
Actuated g/C Ratio	0.17		0.67			0.67
v/c Ratio	0.60		0.65			1.70
Control Delay	26.8		8.1			341.3
Queue Delay	0.0		0.6			0.0
Total Delay	26.8		8.7			341.3
LOS	C		A			F

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Approach Delay	26.8		8.7			341.3
Approach LOS	C		A			F
Queue Length 50th (ft)	55		133			~597
Queue Length 95th (ft)	111		253			#890
Internal Link Dist (ft)	255		344			3000
Turn Bay Length (ft)						
Base Capacity (vph)	600		2352			644
Starvation Cap Reductn	0		397			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.34		0.79			1.70

Intersection Summary	
Area Type: Other	
Cycle Length: 70.3	
Actuated Cycle Length: 63.8	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.70	
Intersection Signal Delay: 138.6	Intersection LOS: F
Intersection Capacity Utilization 117.6%	ICU Level of Service H
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 41: Route 229 & Curtiss Street

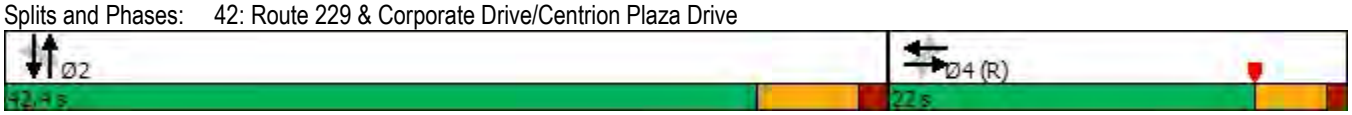
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	5	25	25	0	15	55	1375	20	15	945	60
Future Volume (vph)	30	5	25	25	0	15	55	1375	20	15	945	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	65		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.944			0.950			0.998			0.991	
Flt Protected		0.975			0.970		0.950			0.950		
Satd. Flow (prot)	0	1714	0	0	1717	0	1770	3532	0	1770	1846	0
Flt Permitted		0.817			0.826		0.144			0.140		
Satd. Flow (perm)	0	1437	0	0	1462	0	268	3532	0	261	1846	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			58			4			8	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		287			281			412			424	
Travel Time (s)		6.5			6.4			7.0			7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	5	27	27	0	16	60	1495	22	16	1027	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	65	0	0	43	0	60	1517	0	16	1092	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	17.5	17.5		17.5	17.5		21.4	21.4		21.4	21.4	
Total Split (s)	22.0	22.0		22.0	22.0		42.4	42.4		42.4	42.4	
Total Split (%)	34.2%	34.2%		34.2%	34.2%		65.8%	65.8%		65.8%	65.8%	
Maximum Green (s)	17.5	17.5		17.5	17.5		36.0	36.0		36.0	36.0	
Yellow Time (s)	3.4	3.4		3.4	3.4		4.9	4.9		4.9	4.9	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		6.4	6.4		6.4	6.4	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		0.2	0.2		0.2	0.2	
Recall Mode	C-Min	C-Min		C-Min	C-Min		Max	Max		Max	Max	
Walk Time (s)	12.0	12.0		12.0	12.0							
Flash Dont Walk (s)	1.0	1.0		1.0	1.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		7.5			7.5		46.0	46.0		46.0	46.0	
Actuated g/C Ratio		0.12			0.12		0.71	0.71		0.71	0.71	
v/c Ratio		0.34			0.19		0.31	0.60		0.09	0.83	
Control Delay		22.4			8.1		9.0	6.0		4.3	14.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	9.2	
Total Delay		22.4			8.1		9.0	6.0		4.3	23.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		C			A		A	A		A	C	
Approach Delay		22.4			8.1			6.1			23.3	
Approach LOS		C			A			A			C	
Queue Length 50th (ft)		14			0		6	115		1	219	
Queue Length 95th (ft)		45			19		29	188		8	#600	
Internal Link Dist (ft)		207			201			332			344	
Turn Bay Length (ft)							100			65		
Base Capacity (vph)		410			439		191	2521		186	1319	
Starvation Cap Reductn		0			0		0	0		0	207	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.16			0.10		0.31	0.60		0.09	0.98	

Intersection Summary

Area Type: Other
Cycle Length: 64.4
Actuated Cycle Length: 64.4
Offset: 49 (76%), Referenced to phase 4:EBWB, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 13.3 Intersection LOS: B
Intersection Capacity Utilization 68.3% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 42: Route 229 & Corporate Drive/Centrion Plaza Drive

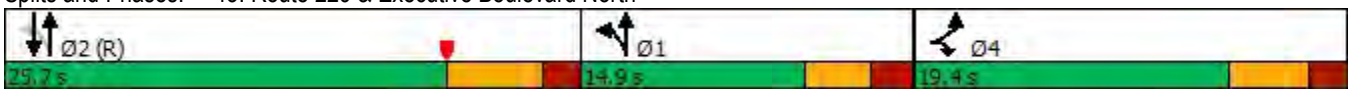


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	65	85	20	1385	980	15
Future Volume (vph)	65	85	20	1385	980	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	360	220			240
Storage Lanes	1	1	1			1
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.998	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3532	0
Flt Permitted	0.950		0.178			
Satd. Flow (perm)	1770	1583	332	3539	3532	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		92			3	
Link Speed (mph)	30			40	40	
Link Distance (ft)	694			570	291	
Travel Time (s)	15.8			9.7	5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	92	22	1505	1065	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	71	92	22	1505	1081	0
Turn Type	Prot	Prot	pm+pt	NA	NA	
Protected Phases	4	4	1	1 2	2	
Permitted Phases			1 2			
Detector Phase	4	4	1	1 2	2	
Switch Phase						
Minimum Initial (s)	7.0	7.0	4.0		15.0	
Minimum Split (s)	12.4	12.4	8.9		21.0	
Total Split (s)	19.4	19.4	14.9		25.7	
Total Split (%)	32.3%	32.3%	24.8%		42.8%	
Maximum Green (s)	14.0	14.0	10.0		19.7	
Yellow Time (s)	3.6	3.6	3.0		4.3	
All-Red Time (s)	1.8	1.8	1.9		1.7	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.4	5.4	4.9		6.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.5	2.5	2.0		0.2	
Recall Mode	None	None	None		C-Max	
Walk Time (s)	24.0	24.0				
Flash Dont Walk (s)	1.0	1.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	7.9	7.9	39.3	45.2	28.5	
Actuated g/C Ratio	0.13	0.13	0.66	0.75	0.48	
v/c Ratio	0.30	0.32	0.05	0.56	0.64	
Control Delay	26.7	9.4	4.2	5.5	15.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	26.7	9.4	4.2	5.5	15.6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
LOS	C	A	A	A	B	
Approach Delay	16.9			5.5	15.6	
Approach LOS	B			A	B	
Queue Length 50th (ft)	24	0	2	111	156	
Queue Length 95th (ft)	54	33	8	191	241	
Internal Link Dist (ft)	614			490	211	
Turn Bay Length (ft)		360	220			
Base Capacity (vph)	413	439	458	2624	1679	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.21	0.05	0.57	0.64	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 59 (98%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 52.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 43: Route 229 & Executive Boulevard North



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	175	530	240	1230	935	135
Future Volume (vph)	175	530	240	1230	935	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			5%	0%	
Storage Length (ft)	860	370	335			250
Storage Lanes	1	1	2			1
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	0.88	0.97	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	2787	3347	3451	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	2787	3347	3451	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		24				147
Link Speed (mph)	30			40	40	
Link Distance (ft)	945			579	570	
Travel Time (s)	21.5			9.9	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	576	261	1337	1016	147
Shared Lane Traffic (%)						
Lane Group Flow (vph)	190	576	261	1337	1016	147
Turn Type	Prot	pt+ov	Prot	NA	NA	pm+ov
Protected Phases	4	1 4	1	1 2	2	4
Permitted Phases		1 4				2
Detector Phase	4	1 4	1	1 2	2	4
Switch Phase						
Minimum Initial (s)	7.0		4.0		15.0	7.0
Minimum Split (s)	12.4		8.6		20.8	12.4
Total Split (s)	20.4		15.0		25.0	20.4
Total Split (%)	33.8%		24.8%		41.4%	33.8%
Maximum Green (s)	15.0		10.4		19.2	15.0
Yellow Time (s)	3.6		3.0		4.3	3.6
All-Red Time (s)	1.8		1.6		1.5	1.8
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.4		4.6		5.8	5.4
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.5		2.0		0.2	2.5
Recall Mode	None		None		C-Max	None
Walk Time (s)	22.0					22.0
Flash Dont Walk (s)	1.0					1.0
Pedestrian Calls (#/hr)	0					0
Act Effct Green (s)	12.6	30.7	12.7	37.8	19.3	37.7
Actuated g/C Ratio	0.21	0.51	0.21	0.63	0.32	0.62
v/c Ratio	0.51	0.40	0.37	0.62	0.90	0.14
Control Delay	25.9	9.8	23.1	9.0	32.6	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Delay	25.9	9.8	23.1	9.0	32.6	1.1
LOS	C	A	C	A	C	A
Approach Delay	13.8			11.3	28.6	
Approach LOS	B			B	C	
Queue Length 50th (ft)	61	64	42	137	183	0
Queue Length 95th (ft)	111	99	75	212	#295	13
Internal Link Dist (ft)	865			499	490	
Turn Bay Length (ft)	860	370	335			250
Base Capacity (vph)	439	1397	702	2159	1131	1100
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.41	0.37	0.62	0.90	0.13

Intersection Summary	
Area Type: Other	
Cycle Length: 60.4	
Actuated Cycle Length: 60.4	
Offset: 21 (35%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 17.6	Intersection LOS: B
Intersection Capacity Utilization 55.6%	ICU Level of Service B
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 44: Route 229 & Executive Boulevard South

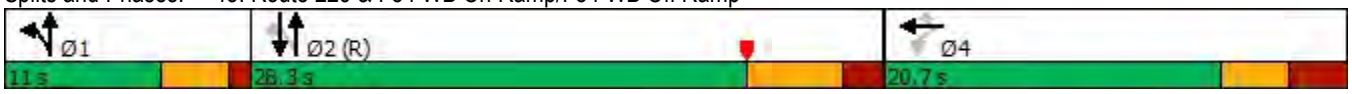
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	475	0	375	75	1100	0	0	695	770
Future Volume (vph)	0	0	0	475	0	375	75	1100	0	0	695	770
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			5%	
Storage Length (ft)	0		0	240		440	90		0	0		250
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			100			100			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt						0.850						0.850
Flt Protected				0.950	0.950		0.950					
Satd. Flow (prot)	0	0	0	1681	1681	1583	1770	3539	0	0	3451	1544
Flt Permitted				0.950	0.950		0.293					
Satd. Flow (perm)	0	0	0	1681	1681	1583	546	3539	0	0	3451	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						131						837
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		337			747			508			579	
Travel Time (s)		7.7			17.0			8.7			9.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	516	0	408	82	1196	0	0	755	837
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	0	0	258	258	408	82	1196	0	0	755	837
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					4		1	1 2			2	
Permitted Phases				4		4	1 2					2
Detector Phase				4	4	4	1	1 2			2	2
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0	5.0				15.0	15.0
Minimum Split (s)				12.7	12.7	12.7	9.0				21.2	21.2
Total Split (s)				20.7	20.7	20.7	11.0				28.3	28.3
Total Split (%)				34.5%	34.5%	34.5%	18.3%				47.2%	47.2%
Maximum Green (s)				15.0	15.0	15.0	7.0				22.1	22.1
Yellow Time (s)				3.0	3.0	3.0	3.0				4.3	4.3
All-Red Time (s)				2.7	2.7	2.7	1.0				1.9	1.9
Lost Time Adjust (s)				0.0	0.0	0.0	0.0				0.0	0.0
Total Lost Time (s)				5.7	5.7	5.7	4.0				6.2	6.2
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)				2.0	2.0	2.0	2.0				0.2	0.2
Recall Mode				None	None	None	None				C-Max	C-Max
Act Effct Green (s)				13.7	13.7	13.7	32.6	36.6			22.4	22.4
Actuated g/C Ratio				0.23	0.23	0.23	0.54	0.61			0.37	0.37
v/c Ratio				0.67	0.67	0.88	0.18	0.55			0.59	0.76
Control Delay				30.2	30.2	37.7	6.5	8.5			17.4	6.9
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				30.2	30.2	37.7	6.5	8.5			17.4	6.9
LOS				C	C	D	A	A			B	A
Approach Delay					33.5			8.4			11.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS					C			A			B	
Queue Length 50th (ft)				87	87	94	11	123			112	0
Queue Length 95th (ft)				157	157	#236	26	173			163	69
Internal Link Dist (ft)		257			667			428			499	
Turn Bay Length (ft)				240		440	90					250
Base Capacity (vph)				420	420	494	458	2157			1289	1101
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.61	0.61	0.83	0.18	0.55			0.59	0.76

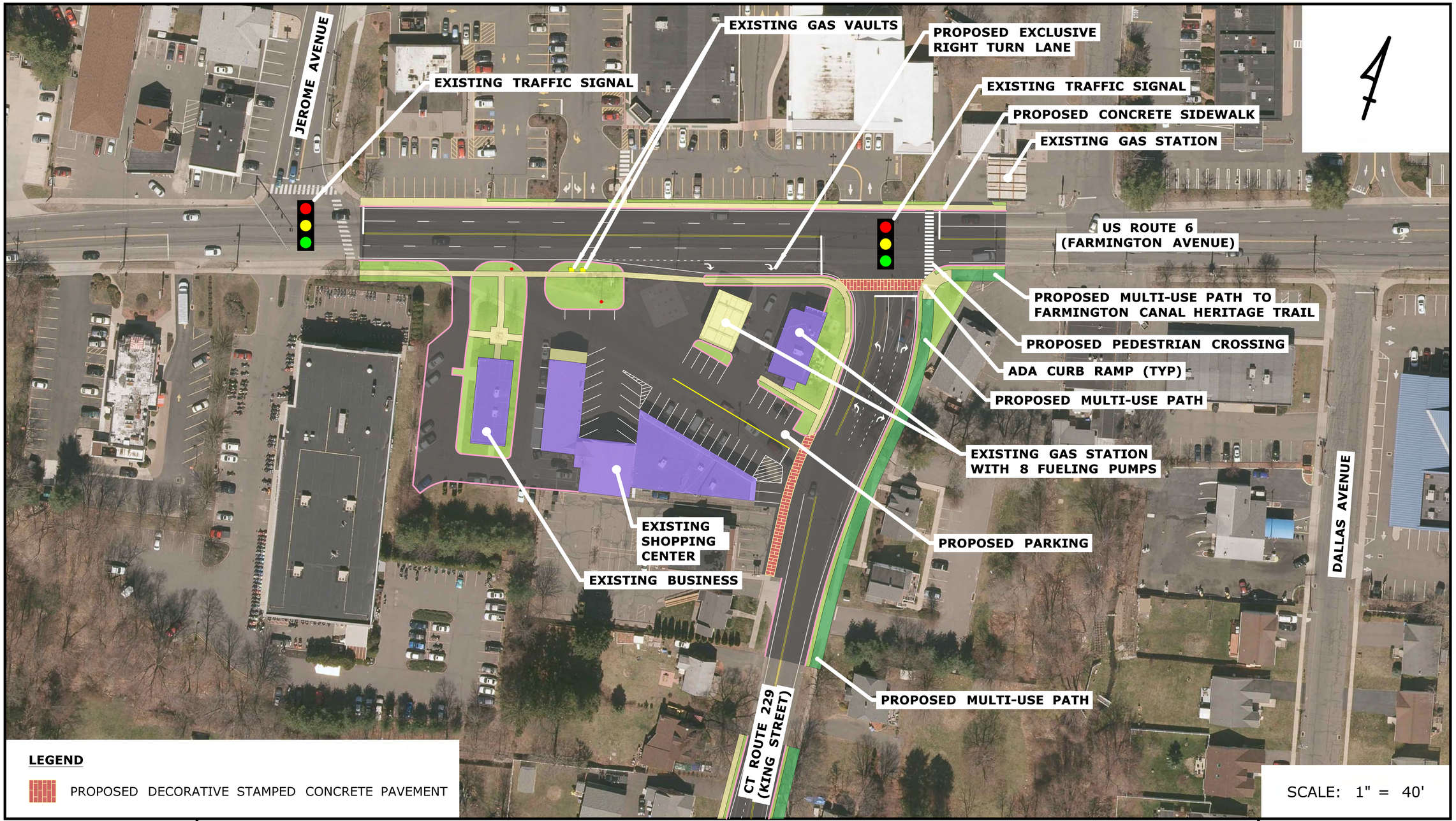
Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 20 (33%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 16.0 Intersection LOS: B
Intersection Capacity Utilization 78.3% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 45: Route 229 & I-84 WB On Ramp/I-84 WB Off Ramp



Appendix K Renderings



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ENGINEERING
ENVIRONMENTAL
LAND SURVEYING
Companies

CT ROUTE 229 CORRIDOR STUDY

NAUGATUCK VALLEY COUNCIL of GOVERNMENTS

BRISTOL, CONNECTICUT

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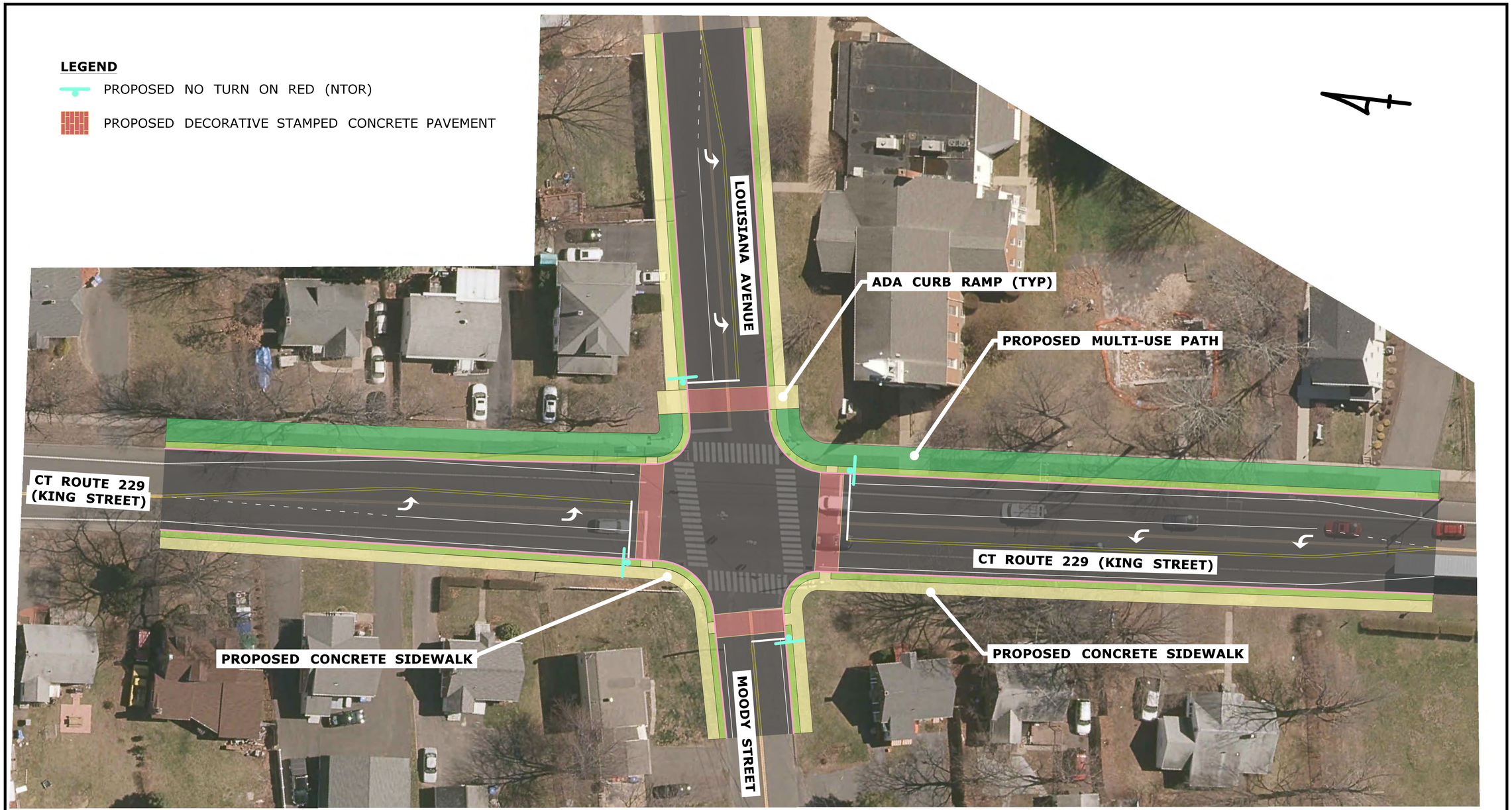

SCALE: 1" = 20'

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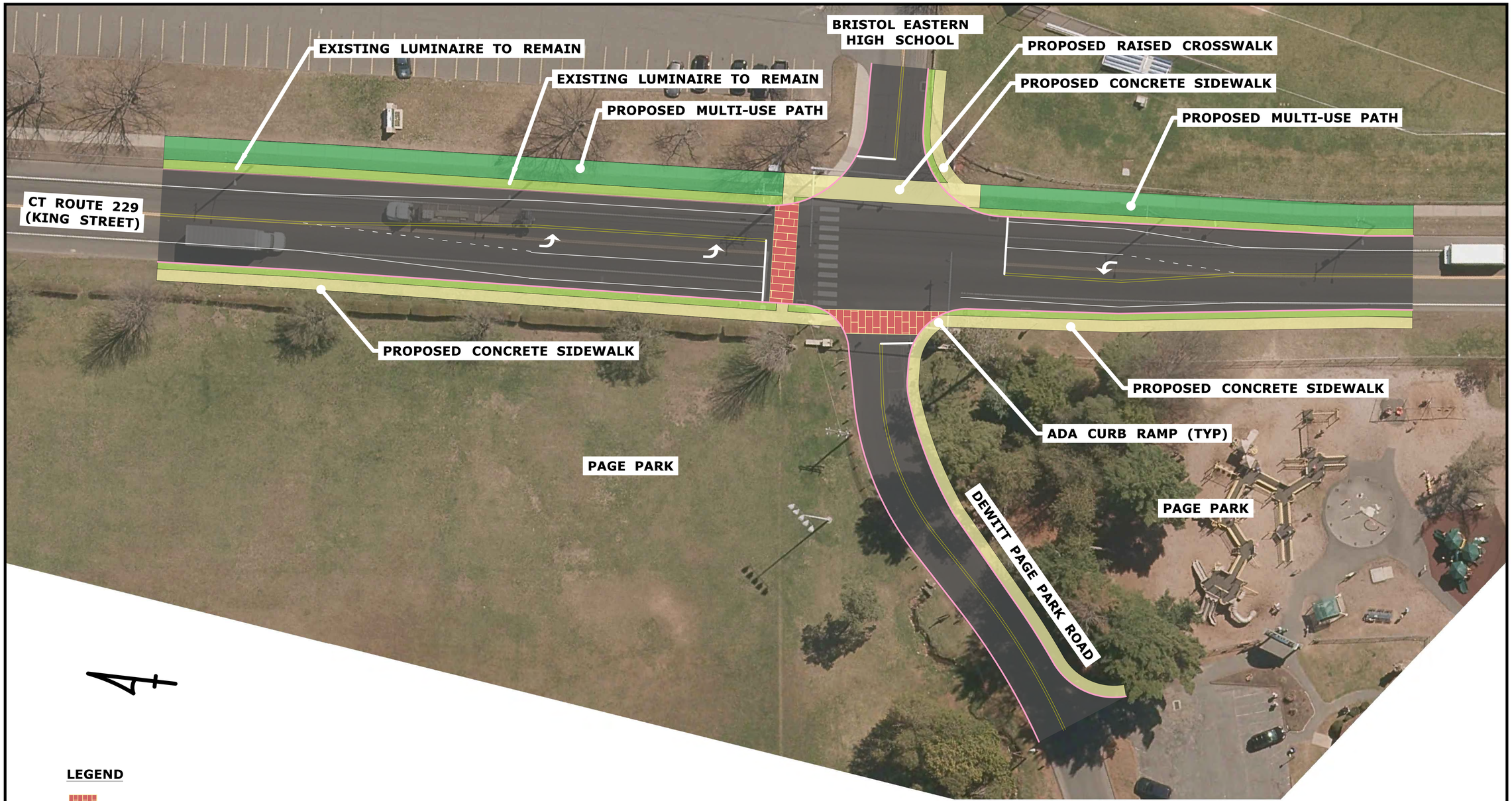

LEGEND

PROPOSED DECORATIVE STAMPED CONCRETE PAVEMENT

SCALE: 1" = 20'

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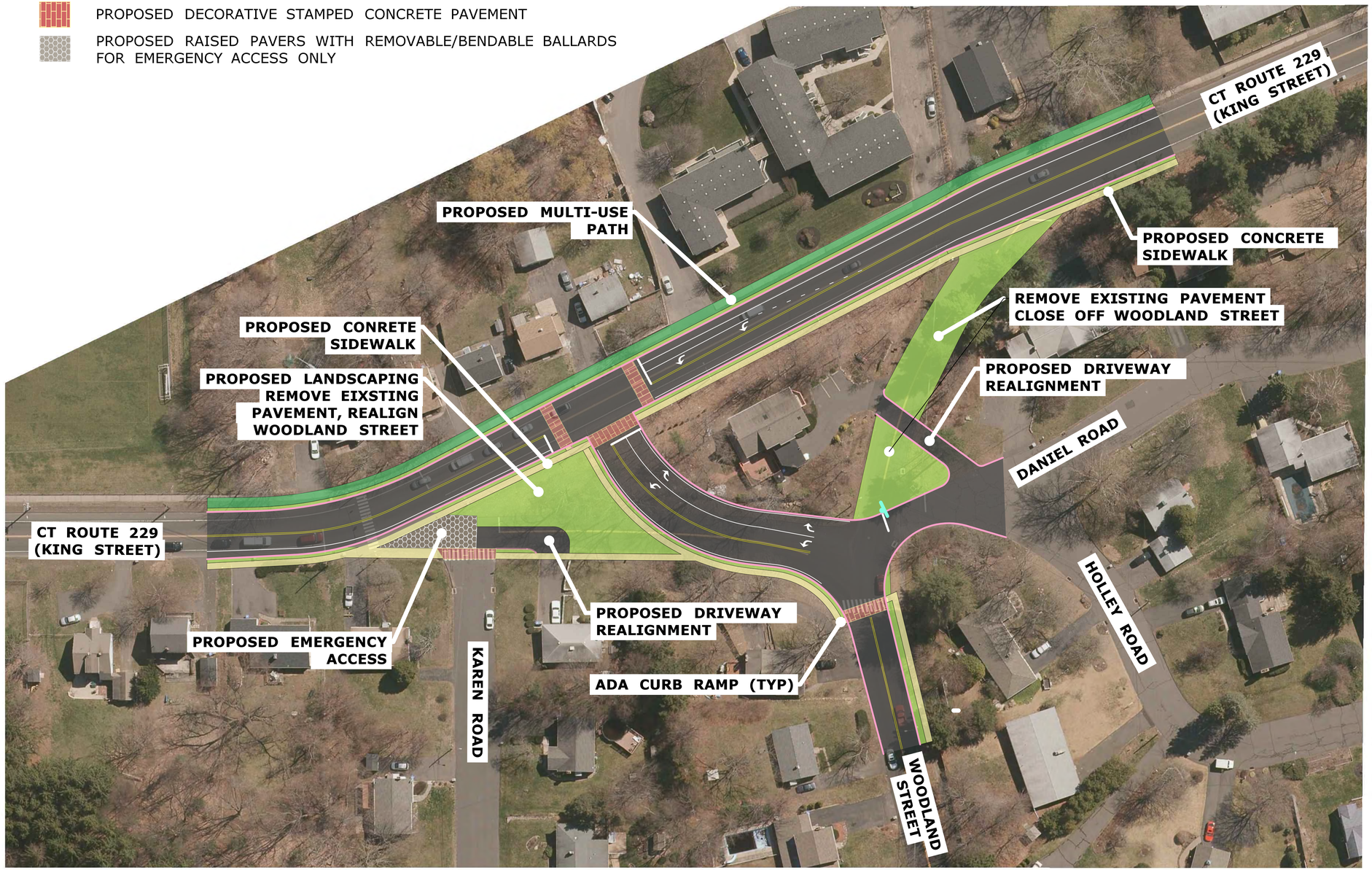
LEGEND

PROPOSED DECORATIVE STAMPED CONCRETE PAVEMENT

PROPOSED RAISED PAVERS WITH REMOVABLE/BENDABLE BALLARDS FOR EMERGENCY ACCESS ONLY



SCALE: 1" = 40'

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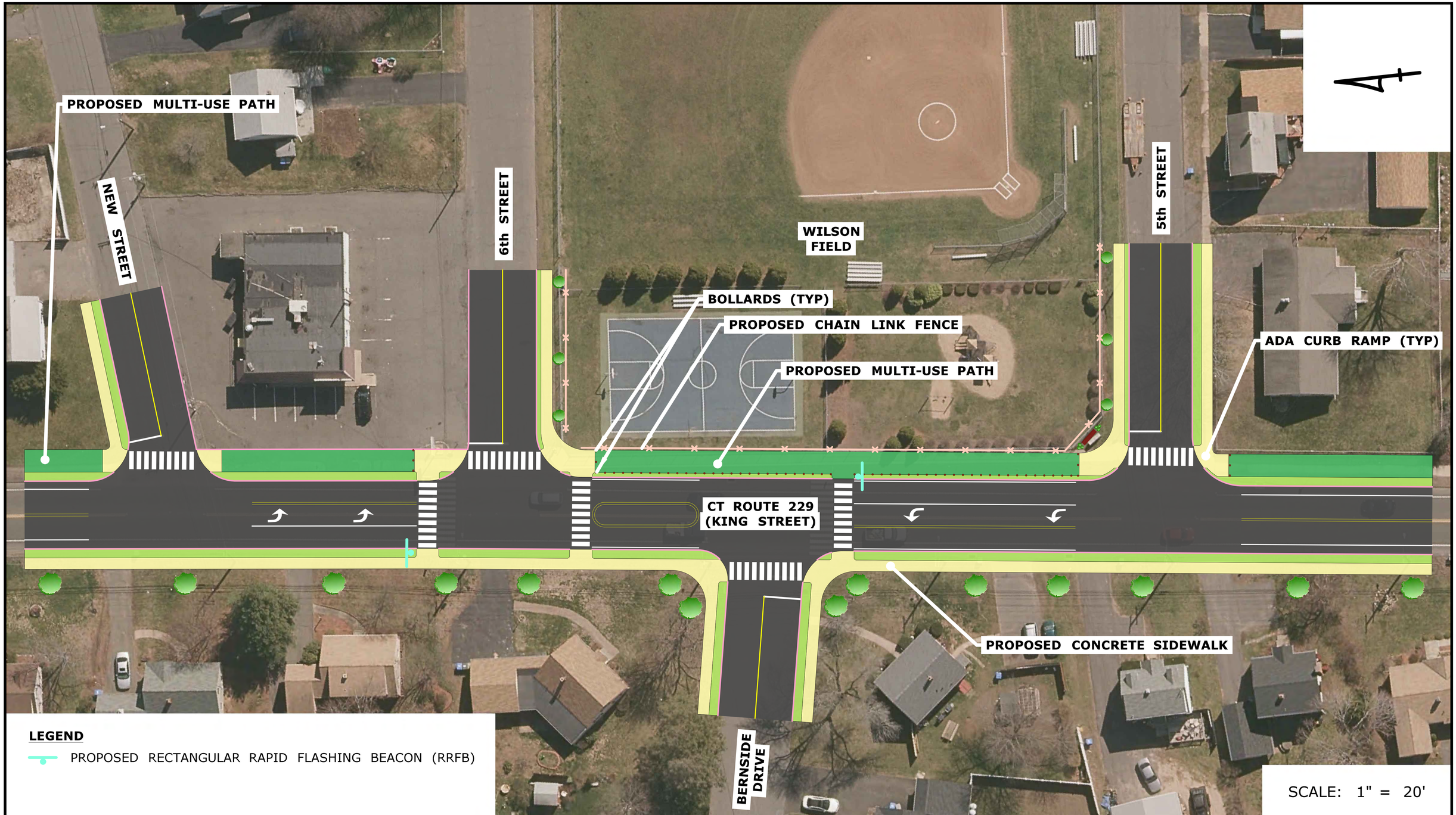

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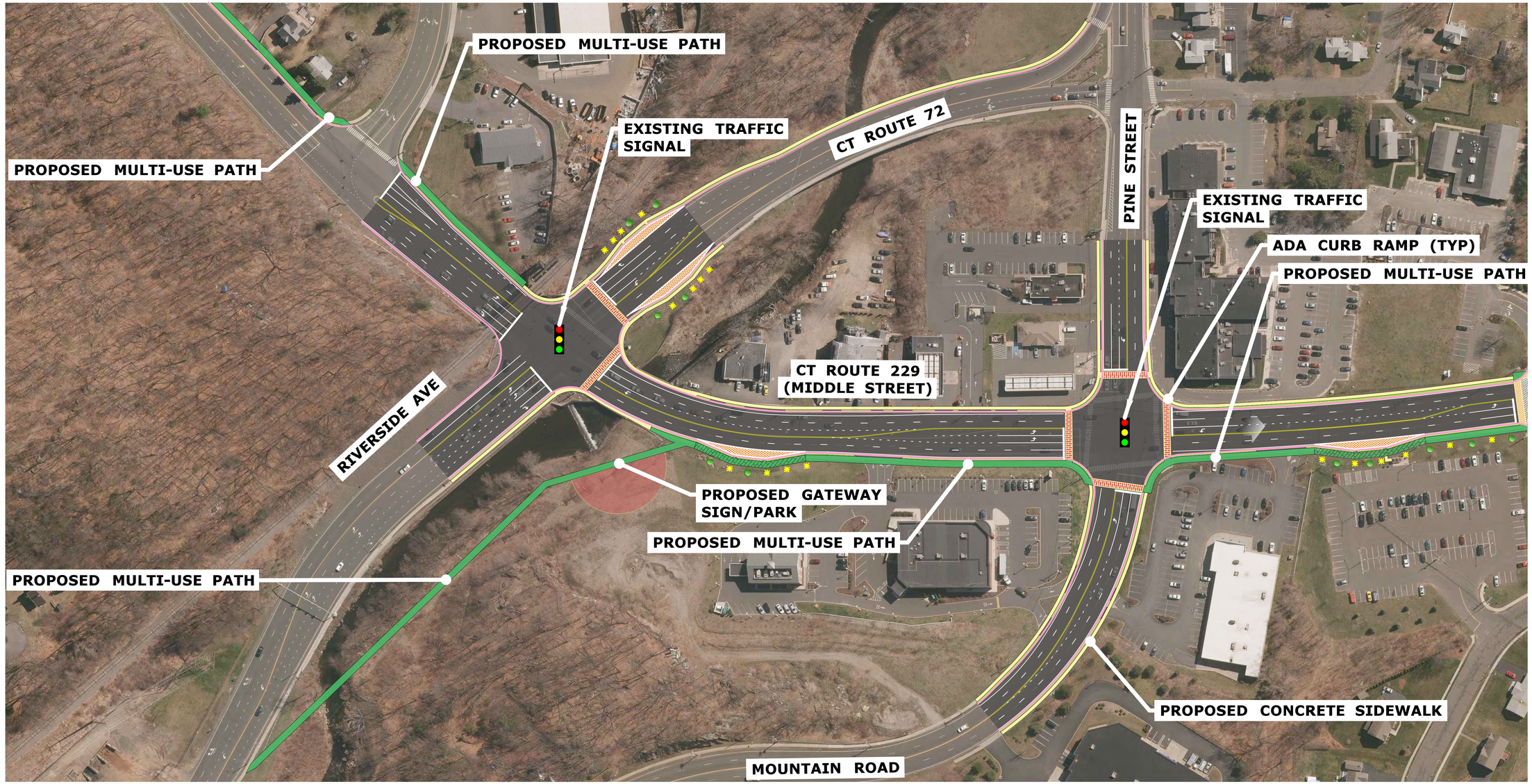

LEGEND

PROPOSED DECORATIVE STAMPED CONCRETE PAVEMENT

SCALE: 1" = 80'

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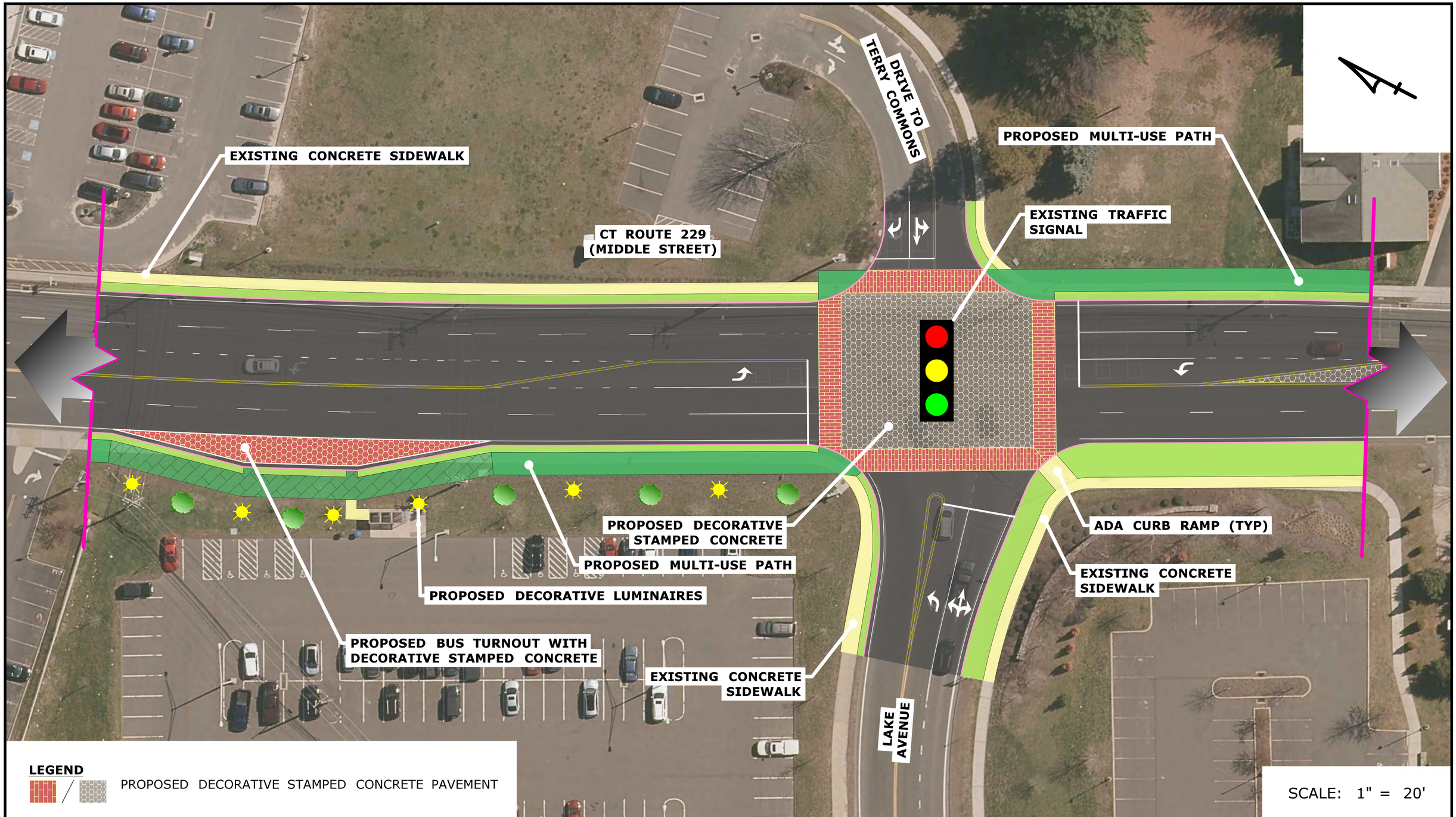

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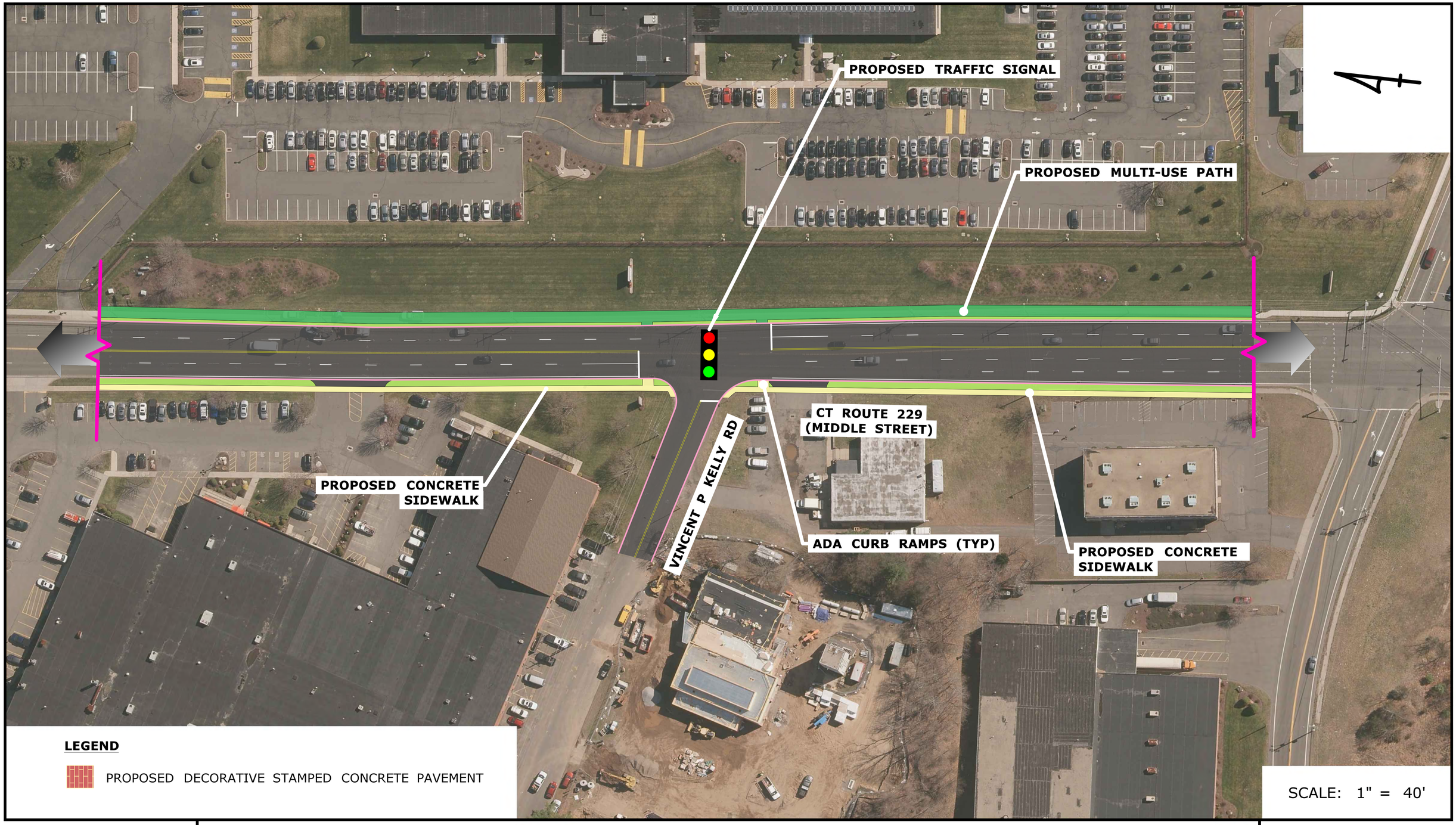

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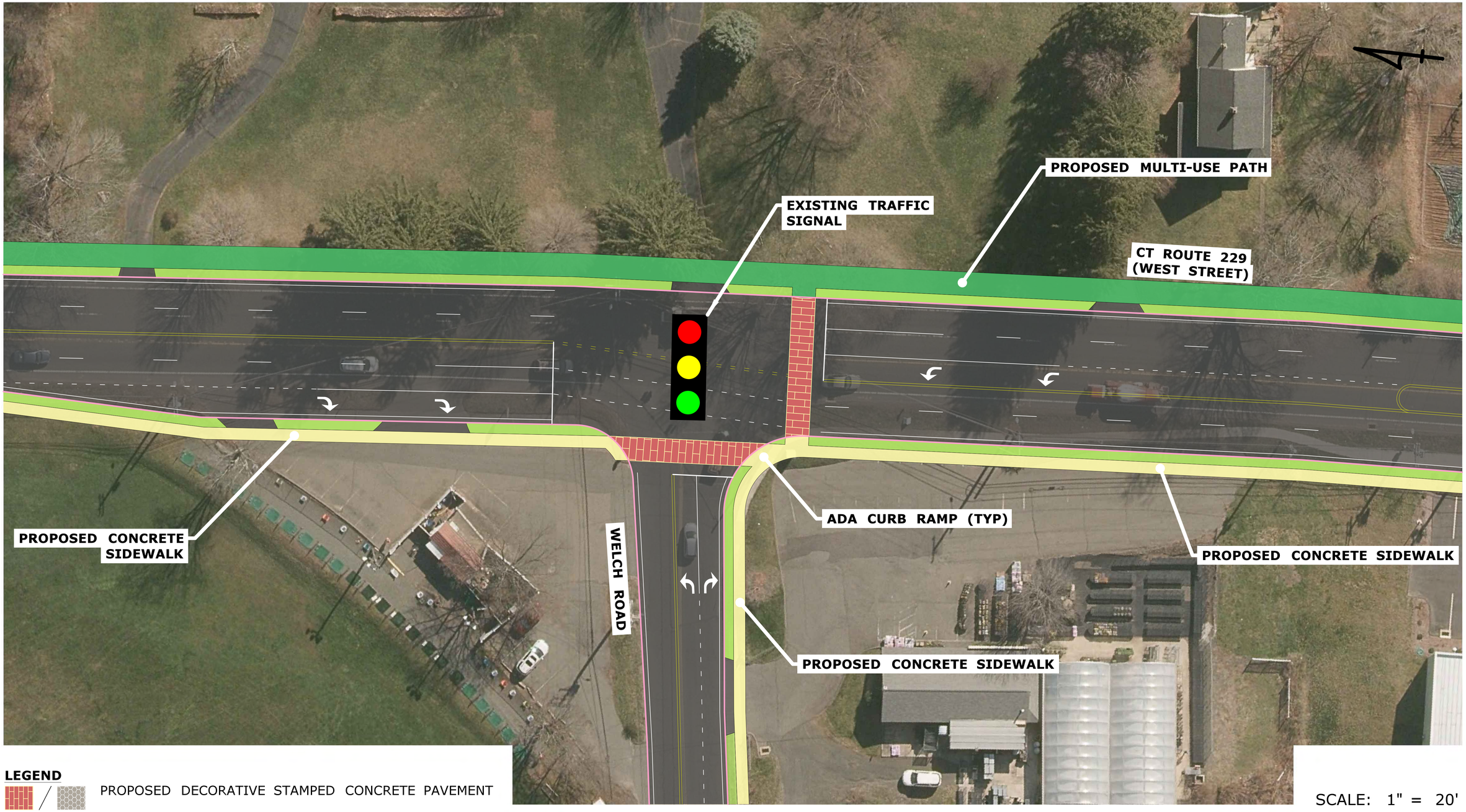

LEGEND

PROPOSED DECORATIVE STAMPED CONCRETE PAVEMENT

SCALE: 1" = 20'

BL Companies
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ENVIRONMENTAL
LAND SURVEYING

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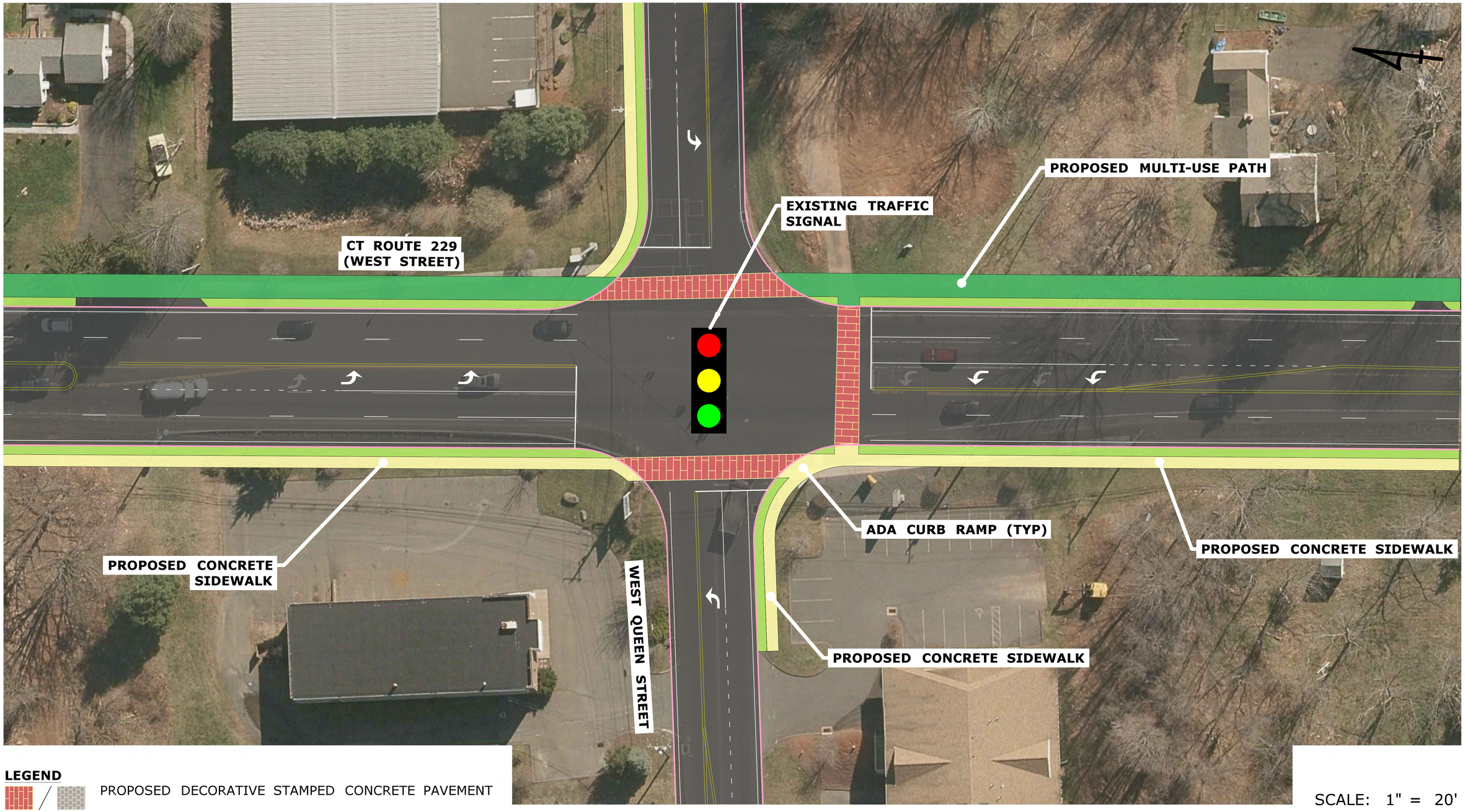

LEGEND

PROPOSED DECORATIVE STAMPED CONCRETE PAVEMENT

SCALE: 1" = 20'

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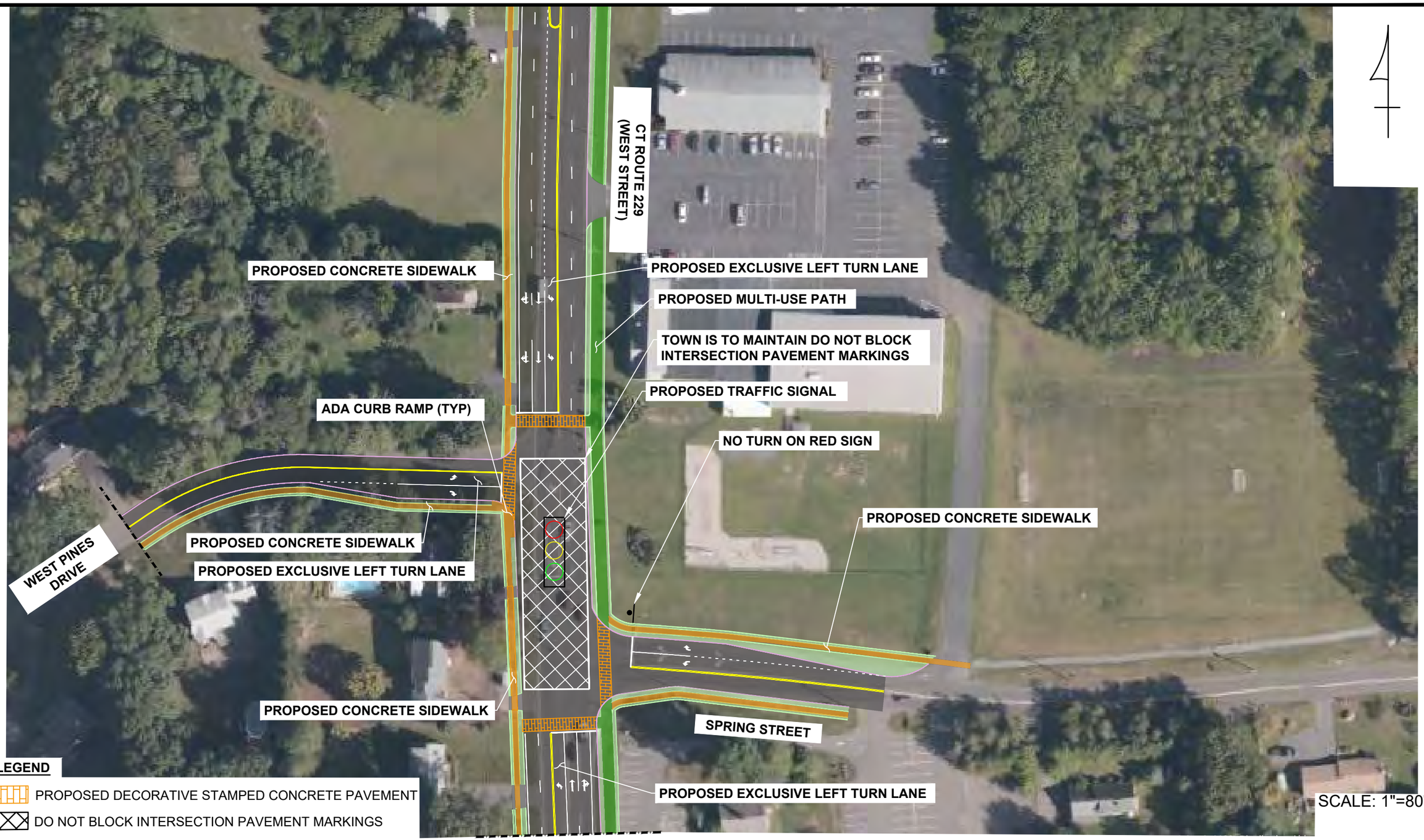

SCALE: 1"=80'

7/26/2022, MKURKER, \\BLCOMPANIES.COM\DFS\PROJ\JOBS\19\18\1901992\DWG\CP190199202_ALT.DWG,CP-03.

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4

CT ROUTE 229 (WEST STREET)

PROPOSED CONCRETE SIDEWALK

PROPOSED MULTI-USE PATH

PROPOSED TRAFFIC SIGNAL

REMOVE EXISTING PAVEMENT

WEST PINES DRIVE PROPOSED RE-ALIGNMENT

PROPOSED SPRING STREET REALIGNMENT

PROPOSED CONCRETE SIDEWALK

SPRING STREET

WEST PINES DRIVE

PROPOSED CONCRETE SIDEWALK

PROPOSED EXCLUSIVE LEFT TURN LANE

ADA CURB RAMP (TYP)

PROPOSED CONCRETE SIDEWALK

SPRING STREET

PROPOSED CONCRETE SIDEWALK

REMOVE EXISTING PAVEMENT

LEGEND

PROPOSED DECORATIVE STAMPED CONCRETE PAVEMENT

SCALE: 1"=80'

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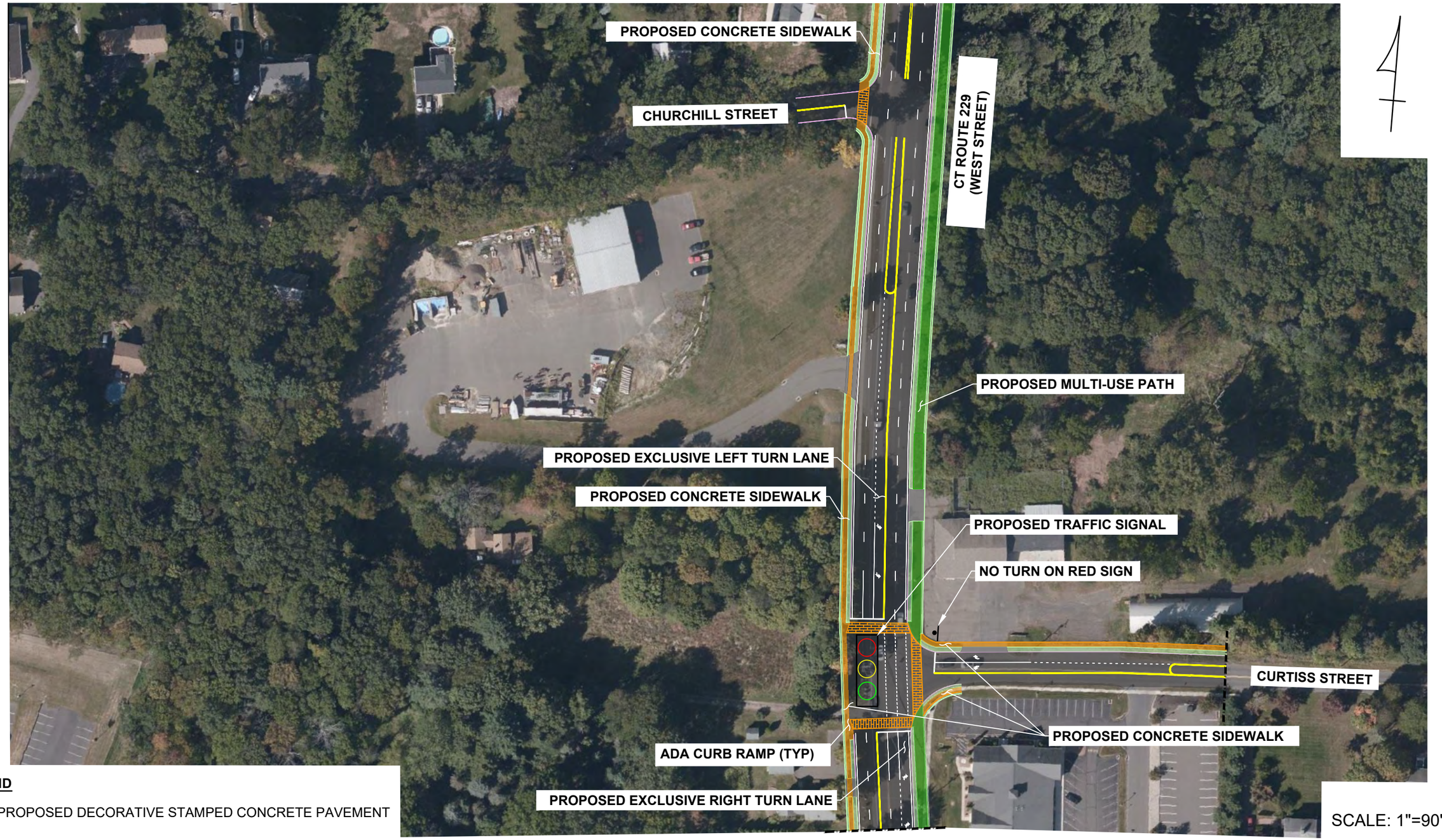

4

LEGEND

PROPOSED DECORATIVE STAMPED CONCRETE PAVEMENT

SCALE: 1"=90'

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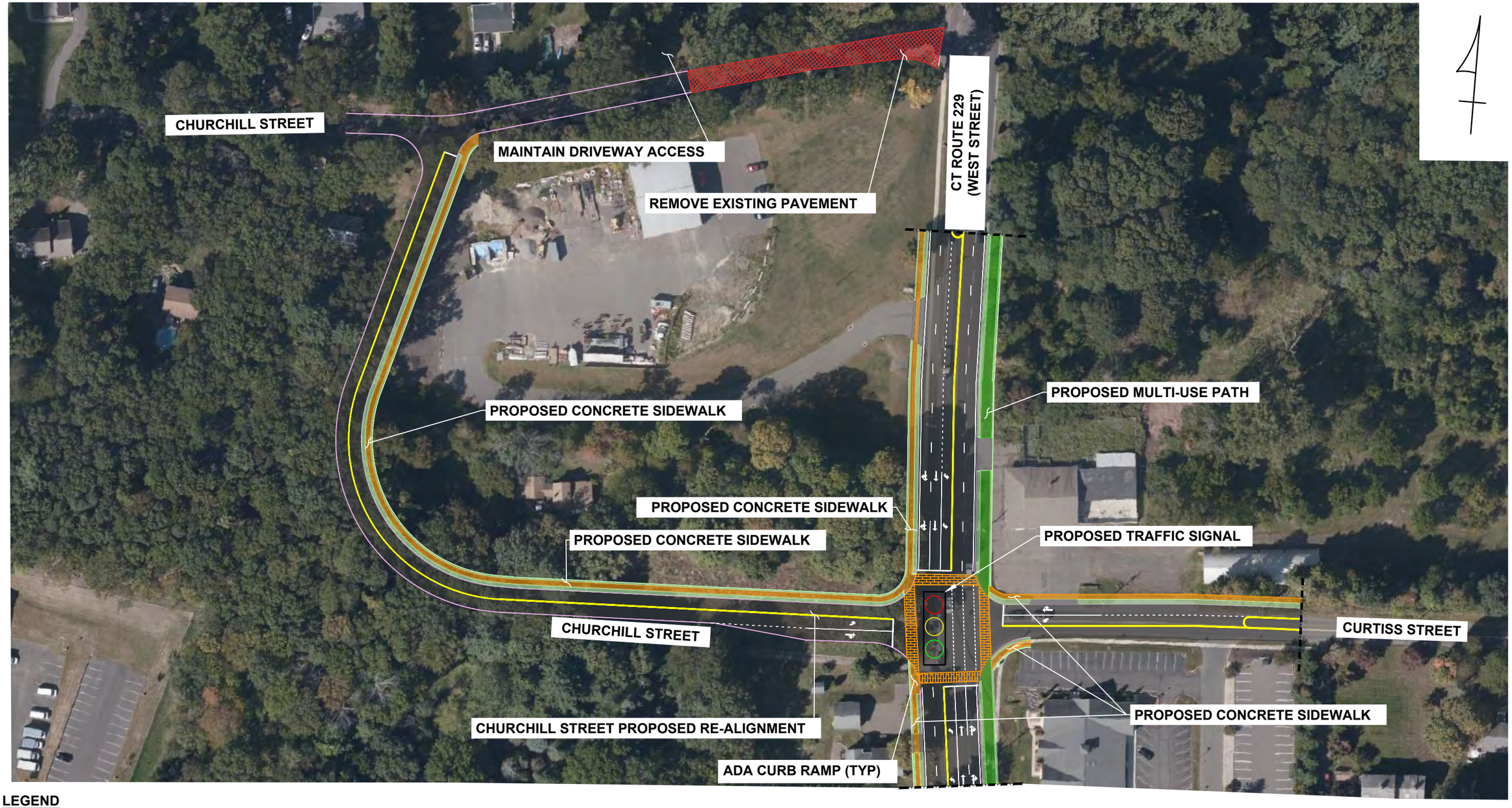

LEGEND

PROPOSED DECORATIVE STAMPED CONCRETE PAVEMENT

SCALE: 1"=90'

7/26/2022, MKURKER, \\BLCOMPANIES.COM\DFS\PROJ\JOBS19\18\1901992\DWG\CP190199202.DWG,CP-04,

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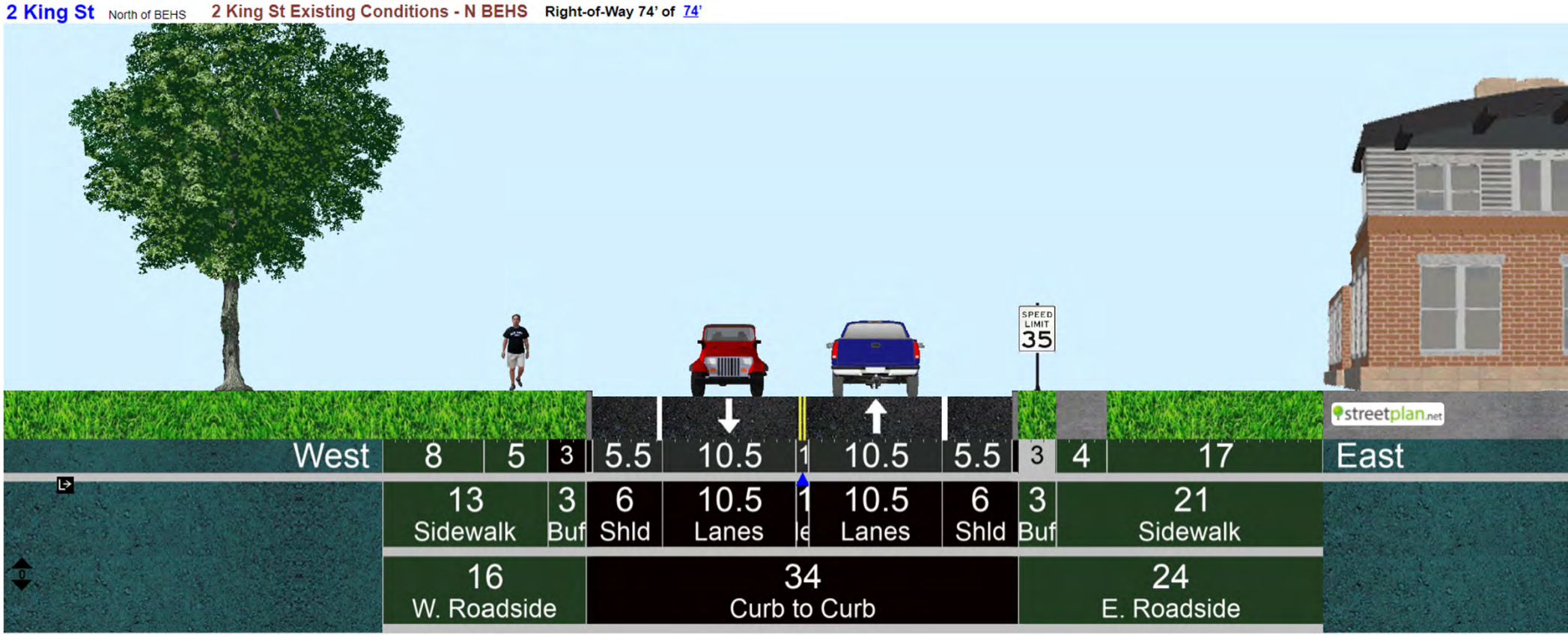
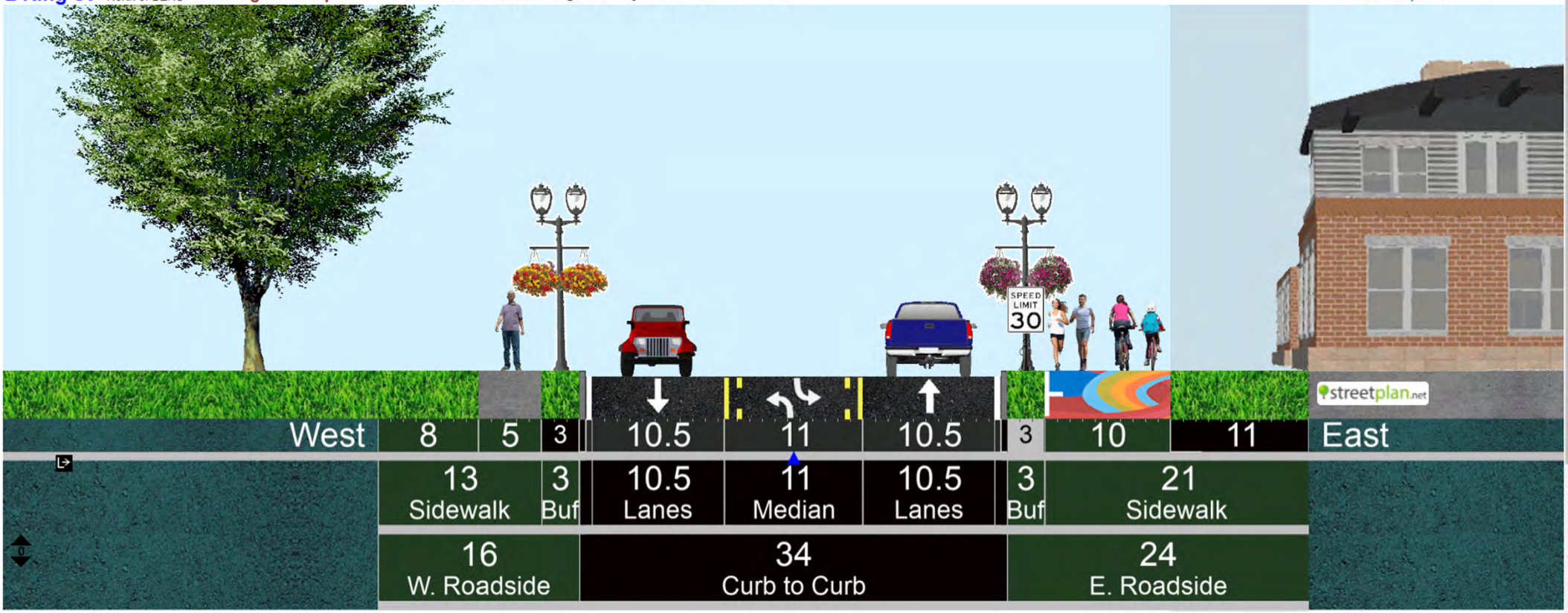
Appendix L Cross-Sections

King St

https://www.streetplan.net/AL/BLC/Rt229/68289



2 King St North of BEHS **1 King St - Proposed BikeSW- N of BEHS** **Right-of-Way 74' of 74'** Share ▼ BLCompanies



Middle St

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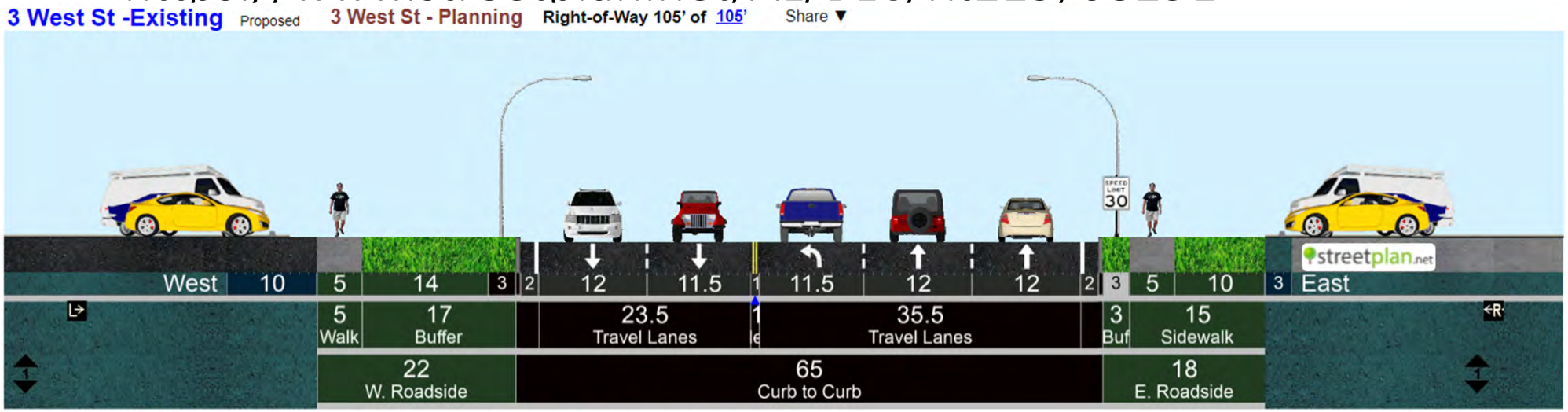

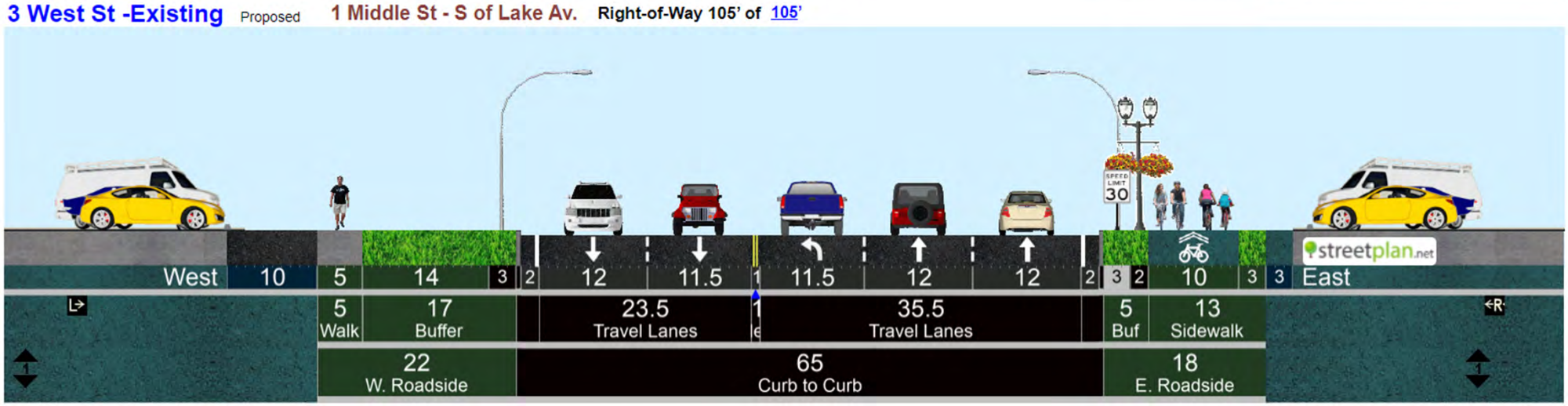

WEST END

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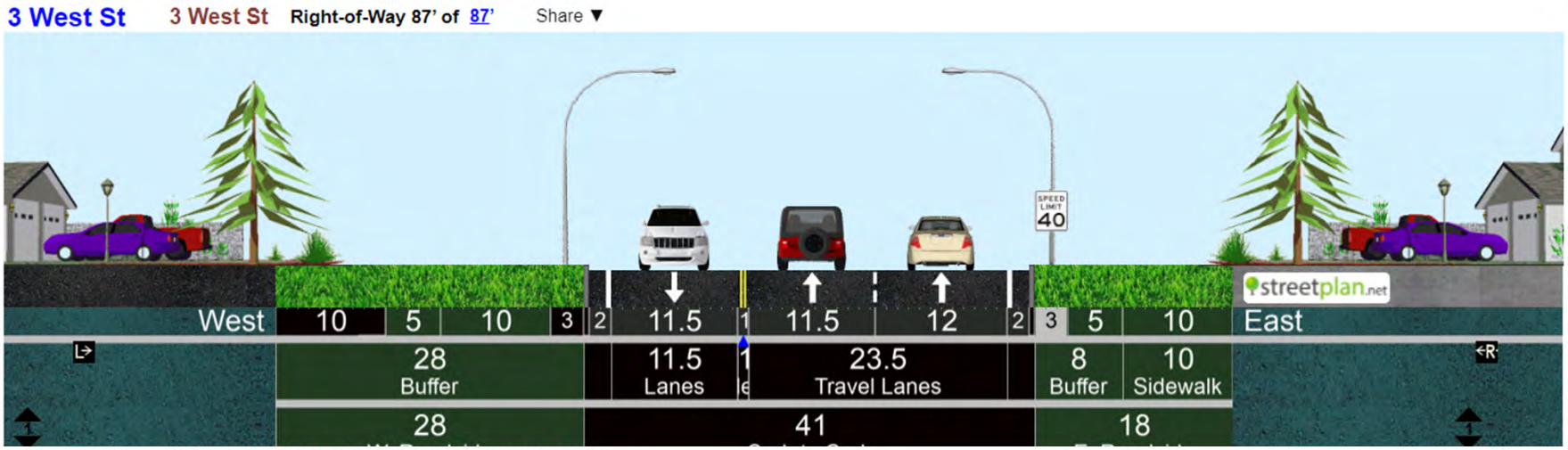
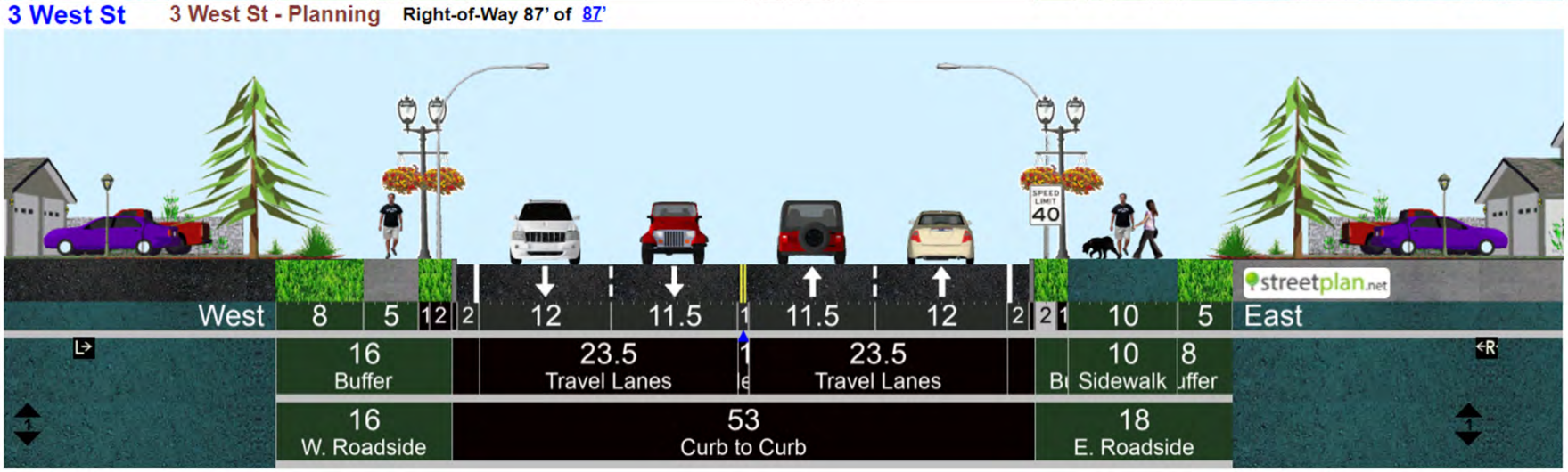
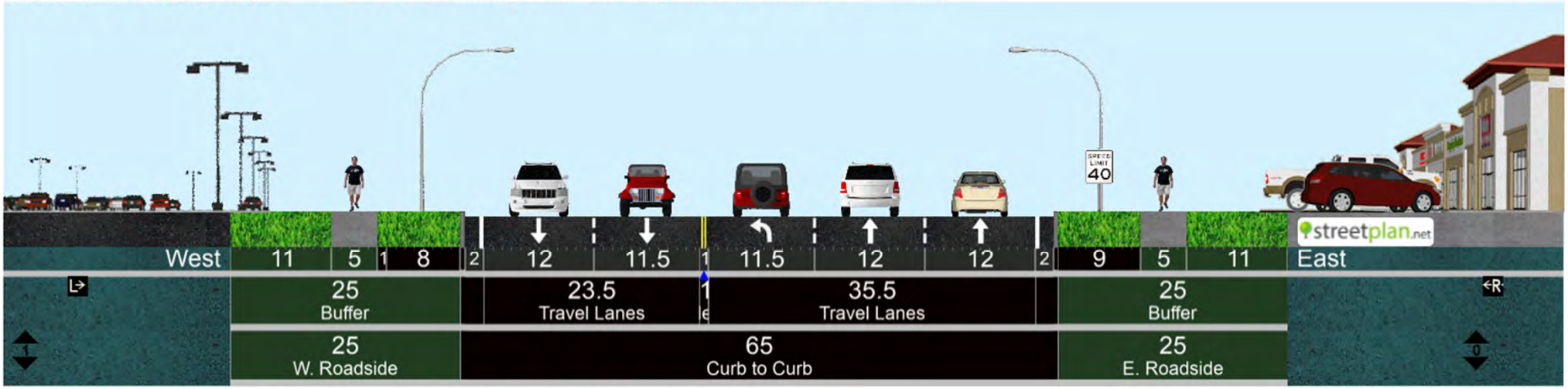


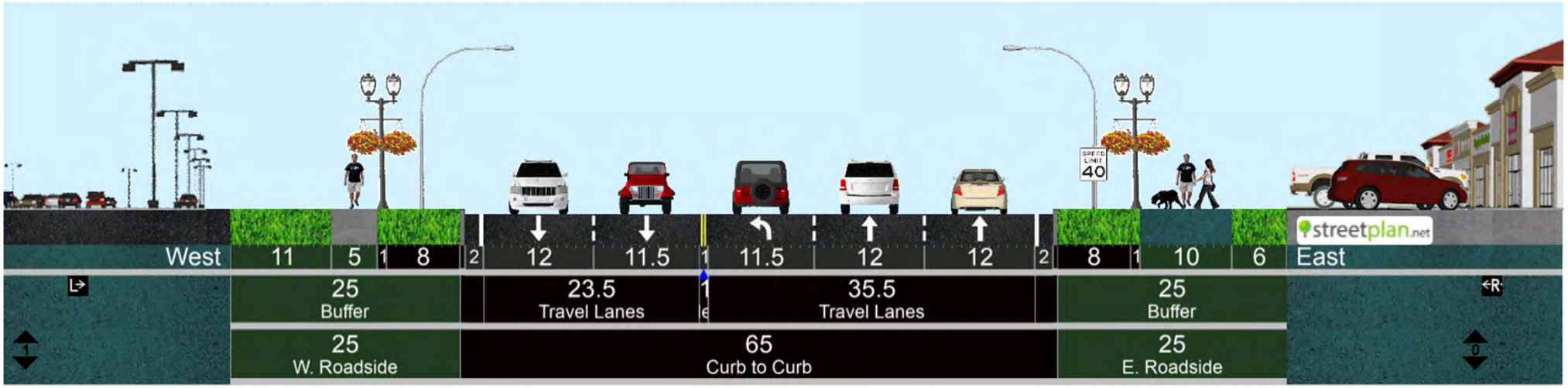


https://www.streetplan.net/AL/BLC/Rt229/68301

3 West St - Commercial **3 West St - Planning Commerc.** **Right-of-Way 115' of 115'** Share ▼



3 West St - Commercial **3 West St - Planning Commerc.2** **Right-of-Way 115' of 115'**



Appendix L Response to Comments

Architecture
Engineering
Environmental
Land Surveying
Companies

An Employee-Owned Company

July 28, 2022

Rich Donovan
Transportation Planner
Naugatuck Valley Council of Governments
49 Leavenworth Street, 3rd Floor,
Waterbury CT, 06702

Re: Comments provided by PAC (public outreach committee) and the Public on the CT Route 229 Corridor Study.

Dear Mr. Donavan:

We are in receipt of comments provided by the PAC members and the public. Our responses are indicated below in ***bold blue italic*** text.

CTDOT Comments:

Division of Traffic Engineering Operations Unit – Comments (5/26/22):
CT Route 229 Corridor study dated May 2022

General Comments:

- Please refer to the comment previously provided as shown below and address accordingly:
- It is suggested that a summary table (similar to Table 11 but with individual approach lanes shown) be provided indicating the vehicle queues versus storage lane length available at each of the signalized intersection approach lanes. This would aid in determining potential areas of concern.

Response: A table with details on each signalized intersection is provided in the appendix. This includes approach values by lane.

- Note that any decorative stamped concrete is to be maintained by each City/Town.

Response: Noted, the text has been updated include this comment.

- A 4-foot minimum distance is required from all stop bars to crosswalks.

Response: Noted, the designs provided approximate values.

- It is understood that this is a conceptual proposal and if pursued, please ensure that travel lanes are properly aligned in future design plans.

Response: Noted, this is a planning study and designs are conceptual. However, utmost care was given to design concepts that are realistic and could be constructed.

- Under the current Department of Transportation's resurfacing projects (VIP), the widths of through lanes and turn lanes have been reduced to 11' and 10', respectively.

Response: The concepts plans of some of the signalized intersections reflect the reduced values. Other intersections could be restriped to 11ft and 10ft providing additional shoulder width.

<u>Intersection Comments</u>:

Route 229 (King Street) at Route 6 (Farmington Avenue) – Int. No. 017-209

- Since there is no existing pedestrian phase, the proposed pedestrian signal phase could impact the existing northbound queuing problems at the intersection of Route 229 and Louisiana Ave. Consider adding a Leading Pedestrian Interval (LPI), if possible.
- Reanalyze capacity analysis reflecting the proposed pedestrian phase to evaluate the 95th percentile queues, if LPI is not considered.
- A signal revision will be required to reflect the proposed changes.

Response: Noted, LPI were not considered, however, all signals could be further optimized. If intersections designs are selected for further study and design LPI and/or concurrent pedestrian phases will be considered. As this is a planning study Streetlight Data was used for traffic counts, any design efforts would require manual turning movement counts to be conducted.

Route 229 (King Street) at Moody Street/Louisiana Avenue (Int. No. 017-208)

- In lieu of the proposed No Turn On Red (NTOR), LPI is recommended, if possible, so as not to impact the Level Of Service (LOS) of the signal.
- The shifting of the centerline on Route 229 may impact the turning capabilities of the right-turning vehicles from all approaches. It is recommended that turning movements with appropriate design vehicles be evaluated.
- A signal revision will be required to reflect the proposed changes.

Response: Noted, LPI were not considered, however, all signals could be further optimized. If intersections designs are selected for further study and design LPI and/or concurrent pedestrian phases will be considered. As this is a planning study Streetlight Data was used for traffic counts, any design efforts would require manual turning movement counts to be conducted. The shift in centerline should not have a negative impact of the turning capabilities of the right-turning vehicles. The radiuses of the intersection approaches are wide.

Route 229 (King Street) at Dewitt Page Park Road (Int. No. 017-207)

- Consider changing the exclusive pedestrian phase to an LPI phase, if possible.
- The shifting of the centerline on Route 229 may impact the turning capabilities of the right-turning vehicles from Route 229 southbound and Dewitt Page Park Rd, respectively. It is recommended that turning movements with appropriate design vehicles be evaluated.

- A signal revision will be required to reflect the proposed changes.

Response: Noted, LPI were not considered, however, all signals could be further optimized and intersection radii can be checked to ensure turning capabilities. If intersections designs are selected for further study and design LPI and/or concurrent pedestrian phases will be considered. As this is a planning study Streetlight Data was used for traffic counts, any design efforts would require manual turning movement counts to be conducted

Route 229 (King Street) at Woodland Street (Int. No. 017-206)

- Have the proposed roadway changes been approved by City?
- Perform a capacity analysis showing the post re-alignment conditions.
- How will the proposed emergency access to Karen Rd be constructed?

Response: The proposed design was done with the input from the city of Bristol and NVCOG. The capacity analysis was performed at the signalized intersection. The streetlight peak hour volumes from the unsignalized intersection were shifted to signalized intersection, to ensure the proposed design can handle the existing and future traffic. Karen Rd. connection will utilize the existing roadway footprint. A piece of the pavement will be texturized and include bollard to prevent everyday users.

Route 229 (King Street) at West Washington Street (Int. No. 017-259)

- Previous comments were not addressed, the location was omitted in the latest concept plans.

Response: Noted, there are 24 signalized intersections, however only ten spot location were selected for in depth design. The design of West Washington Street could be similar to CT Route 229 (King Street) at Moody Street/Louisiana Avenue.

Route 229 (King Street) from New St to 5th St

- Is there enough roadway width to accommodate 10-foot left-turn lanes while maintaining 11-foot wide travel lanes?
- Consider adding a southbound left-turn lane into 5th St back-to-back with the proposed left turn lane into Bernside Dr, if geometrically possible.
- Consider reducing the number of crosswalks across Route 229 from three (3) to one (1) for an effective operation of the proposed RRFB.
- Will City be responsible for the maintenance of the proposed bollards?

Response: Yes, the roadway width is 32 ft wide from curb to curb. The proposed alignment works with two 11 ft travel lanes (one per direction) and 10 ft wide turn lane. The number of crosswalks could be reduced. This was in response to providing better access to the park.

Route 229 (King Street) at Broad Street (Int. No. 017-269)

- Consider upgrading the existing pedestrian equipment and providing a concurrent walk phase with LPI, if possible.

Response: Noted, LPI were not considered, however, all signals could be further optimized. If intersections designs are selected for further study and design LPI and/or concurrent pedestrian phases will be considered. As this is a planning study Streetlight Data was used for traffic counts, any design efforts would require manual turning movement counts to be conducted.

Route 229 (King Street) at Route 72/Riverside Avenue (Int. No. 017-204)

- Consider upgrading the existing pedestrian equipment and providing a concurrent walk with LPI, if possible.
- Push buttons should be accessible from the sidewalk and to consider using extension brackets for the push buttons due to the existing metal beam guiderails.
- Signal revision will be required to reflect the proposed stop bar relocation on Route 72 WB as well as the clearance change intervals.
- Please note that the stop bar shown on Route 72 WB is drawn across the entire width of the roadway.

Response: Noted, LPI were not considered, however, all signals could be further optimized. If intersections designs are selected for further study and design LPI and/or concurrent pedestrian phases will be considered. As this is a planning study Streetlight Data was used for traffic counts, any design efforts would require manual turning movement counts to be conducted. Push buttons will be accessible from the sidewalk and ADA compliant. The stop bar across entire width has been reduced.

Route 229 (Middle Street) at Mountain Road/Pine Street (Int. No. 017-201)

- Consider upgrading the pedestrian equipment and providing a concurrent walk phase with LPI, if possible.
- Signal revision will be required to reflect all proposed stop bar relocations and clearance change intervals.

Response: Noted, LPI were not considered, however, all signals could be further optimized. If intersections designs are selected for further study and design LPI and/or concurrent pedestrian phases will be considered. As this is a planning study Streetlight Data was used for traffic counts, any design efforts would require manual turning movement counts to be conducted.

Route 229 (Middle Street) at Lake Avenue/Terry Commons (Int. No. 017-261)

- Relocate and upgrade push buttons to be ADA compliant.
- Signal revision will be required to reflect the proposed stop bar relocations on Route 229 SB and the Drive to Terry Commons as well as the clearance change intervals.

Response: Noted, LPI were not considered, however, all signals could be further optimized. If intersections designs are selected for further study and design LPI and/or concurrent pedestrian phases will be considered. As this is a planning study Streetlight Data was used for traffic counts, any design efforts would require manual turning movement counts to be conducted.

Route 229 (Middle Street) at Battisto Road/Business Park Road (Int. No. 017-258)

- Consider improving the pedestrian amenities to include concurrent walk phase with LPI, if possible.
- Signal revision will be required.

Response: Noted, LPI were not considered, however, all signals could be further optimized. If intersections designs are selected for further study and design LPI and/or concurrent pedestrian phases will be considered. As this is a planning study Streetlight Data was used for traffic counts, any design efforts would require manual turning movement counts to be conducted.

Route 229 (Middle Street) at Vincent P Kelly Road (Proposed Signal)

- The signal warrant analysis stated in the report to have been performed should be submitted for review.

Response: Noted, the signal warrant analysis is included and provided in the Appendix.

Route 229 (Middle Street) at Cross Street/Redstone Hill Road (Int. No. 017-221)

- As previously stated, the Board of Education and Services for the Blind (BESB) has indicated the existence of a client in the area. Upgrade pedestrian amenities to include an exclusive pedestrian phase to accommodate a visually impaired resident.

Response: The signal 017-221 is part of coordinated system with a master on Int. No. 017-255 (CT Rt 229 at Enterprise Drive South). All signal retiming could be further optimized and ensuring an exclusive pedestrian phase is used at selected locations.

Route 229 (Middle Street) at Enterprise Drive (North) (Int. No. 017-260)

- Consider upgrading the pedestrian equipment and provide a concurrent walk phase with LPI, if possible.
- Signal revision will be required.

Response: Noted, LPI were not considered, however, all signals could be further optimized. If intersections designs are selected for further study and design LPI and/or concurrent pedestrian phases will be considered. As this is a planning study Streetlight Data was used for traffic counts, any design efforts would require manual turning movement counts to be conducted.

Route 229 (Middle Street) at Ronzo Road (Int. No. 017-267)

- Consider improving the pedestrian amenities to include concurrent walk phase with LPI, if possible.
- Signal revision will be required.

Response: Noted, LPI were not considered, however, all signals could be further optimized. If intersections designs are selected for further study and design LPI and/or concurrent pedestrian phases will be considered. As this is a planning study Streetlight

Data was used for traffic counts, any design efforts would require manual turning movement counts to be conducted.

Route 229 (Middle Street) at Enterprise Drive (South) (Int. No. 017-255)

- Consider improving the pedestrian amenities to include concurrent walk phase with LPI, if possible.
- Signal revision will be required.

Response: Noted, LPI were not considered, however, all signals could be further optimized. If intersections designs are selected for further study and design LPI and/or concurrent pedestrian phases will be considered. As this is a planning study Streetlight Data was used for traffic counts, any design efforts would require manual turning movement counts to be conducted.

Route 229 (Middle Street) at ESPN Drive (Int. No. 131-254)

- Consider a concurrent pedestrian phase with LPI, if possible.
- Signal revision will be required.

Response: Noted, LPI were not considered, however, all signals could be further optimized. If intersections designs are selected for further study and design LPI and/or concurrent pedestrian phases will be considered. As this is a planning study Streetlight Data was used for traffic counts, any design efforts would require manual turning movement counts to be conducted.

Route 229 (West Street) at Ridgeview Estates / Cumberland Farms (Int. No. 131-264)

- The limits of the concept plans should be expanded to include the proposed roadway widening for the additional southbound travel lane.
- Signal revision will be required.

Response: Noted, there are 24 signalized intersections, however only ten spot location were selected for concept with renderings. The design of West Street at Cumberland Farms / Ridgeview Estates includes widening of southbound approach to include two continuous through lanes. The data provided was approximate ROW thus the actual limits are estimated. A roadway survey class A should be performed for design. The LPI was not considered, however, all signals could be further optimized.

Route 229 (West Street) at West Queen Street (Int. No. 131-225)

- Consider a concurrent walk phase with LPI, if possible.
- Signal revision will be required for both the LPI and side street changes.
- The proposed painted island south of the intersection would preclude turning movements into and out of driveways on the east and west sides of Route 229.
- Revise the solid lane line to a broken lane line for the southbound traffic south of the intersection.

Response: Noted, LPI were not considered, however, all signals could be further optimized. If intersections designs are selected for further study and design LPI and/or

concurrent pedestrian phases will be considered. As this is a planning study Streetlight Data was used for traffic counts, any design efforts would require manual turning movement counts to be conducted. The proposed painted island on Route 229 was revised.

Route 229 (West Street) at Welch Road (Int. No. 131-253)

- Consider a concurrent pedestrian phase with LPI, if possible.
- Signal revision will be required.
- Also, remove the supplemental side street signal head.
- The inner southbound through lane on Route 229 is in conflicting alignment with the opposing northbound left-turn lane.
- Show additional roadway concept plan between Int. Nos. 131-225 and 131-253 to clarify lane transitioning.
- The proposed painted island south of the intersection would preclude turning movements into and out of driveways on the east and west sides of Route 229.
- Revise the solid lane line to a broken lane line for the southbound traffic south of the intersection.

Response: Noted, LPI were not considered, however, all signals could be further optimized. If intersections designs are selected for further study and design LPI and/or concurrent pedestrian phases will be considered. As this is a planning study Streetlight Data was used for traffic counts, any design efforts would require manual turning movement counts to be conducted. The data provided was approximate ROW thus the actual limits are estimated. A roadway survey class A should be performed for design. The proposed painted island on Route 229 and double yellow line was revised. Last, there are 24 signalized intersections, however only ten spot locations were selected for concept with renderings.

Route 229 (West Street) at Spring Street (Int. No. 131-251)

- The proposed painted island on Route 229 would preclude turning movements into and out of driveways on the east and west sides of Route 229.
- The proposed roadway widening on Route 229 may be outside of the State Right-Of-Way (R.O.W.) line.

Response: Noted, the data provided was approximate ROW thus the actual limits are estimated. A roadway survey class A should be performed for design. The proposed painted island on Route 229 was revised.

- Alternative 1 (Without Re-alignment):
    - Signal revision will be required to reflect the proposed stop bar relocation on Route 229 SB and the inclusion of W. Pines Dr to the signal operation. If possible, LPI should be considered.
    - The above revision should include split signal phasing and a second set of stop lines.
    - The exclusive left-turn lanes on Route 229 as proposed could pose a problem with left-turning traffic operations.

- NTOR signs will be required for the side streets.
- The proposed additional lanes on Route 229 may impact the turning capabilities of the right-turning vehicles from both directions of Route 229 into the side streets. It is recommended that turning movements with appropriate design vehicles be evaluated.
- Town is to maintain "Do Not Block the Box" pavement markings.

Response: Noted, LPI were not considered, however, all signals could be further optimized. This is also true with split signal phasing and second set of stop Lines. All side road approaches will have NTOR signs. Side roads turn radii can be readdressed further in design process to optimize vehicle movements and minimize the need to purchase additional ROW.

- Alternative 2 (With Re-alignment):
  - Signal revision will be required to reflect the realignment of Spring St. If possible, LPI should be considered.
  - Provide turning templates showing that left-turning vehicles on Route 229 do not interlock.
  - The proposed additional lanes on Route 229 may impact the turning capabilities of the right-turning vehicles from both directions of Route 229 into the side streets. It is recommended that turning movements with appropriate design vehicles be evaluated.
  - The proposed painted island on Spring St would preclude turning movements into and out of driveways. Consider installing one double yellow centerline.
  - Is the Town in control of the property on the northeast corner of the intersection for the proposed realignment of Spring St?

Response: Noted, the signal design and roadway could be further optimized. If intersection designs are selected for further study and design LPI and/or concurrent pedestrian phases will be considered. As this is a planning study Streetlight Data was used for traffic counts, any design efforts would require manual turning movement counts to be conducted to ensure the proposed design concept is warranted. Overall, the concept was developed with the input from the town of Southington. Special considerations were made to utilize the town owned property.

Route 229 (West Street) at Curtiss Street (Int. No. 131-263)

- The proposed roadway widening on Route 229 may be outside of the State Right-Of- Way (R.O.W.) line.
- The proposed painted island north of the existing signalized intersection would preclude turning movements into and out of the driveway on the west side of Route 229.
- The proposed painted median on Curtiss St would preclude turning movements into and out of driveways. Consider installing one double yellow centerline.

Response: Noted, the signal design and roadway geometry can be further optimized. The island to the north was shortened to ensure the driveway on the westside is a valid movement.

- Alternative 1 (Without Re-alignment):
    - Signal revision will be required. Consider including LPI, if possible.
    - The inner northbound through lane is in conflicting alignment with the opposing southbound left turn lane.
    - The limits of the concept plan on Route 229 south of the signalized intersection should be expanded to clarify lane transitioning.
    - Provide turning template for right-turning vehicles into and out of Curtiss St as well as right-turning vehicles into Churchill St.

  Response: Noted, the signal design and roadway geometry can be further optimized. If the right of way is limited, utilization of line extensions through intersection could be utilized.

- Alternative 2 (With Re-alignment):
    - Signal revision will be required to reflect the realignment of Churchill St. Consider including LPI, if possible.
    - The limits of the roadway concept plan should be expanded to clarify lane alignment in vicinity of Churchill St.
    - Provide turning template for right-turning vehicles into and out of Curtiss St and Churchill St, respectively.
    - Provide turning templates showing that left-turning vehicles on Route 229 do not interlock.
    - Clarify the amount of pavement being removed from Churchill St as it relates to existing driveways.

  Response: Noted, the signal design and roadway geometry can be further optimized. For example, the pavement removal limits were reoptimized to ensure driveway access is provided to properties along Churchill Street.

Route 229 (West Street) at Corporate Drive (Int. No. 131-268)

- Consider upgrading the pedestrian equipment and provide a concurrent walk phase with LPI, if possible.
- Signal revision will be required.

  Response: Noted, all signals along the corridor should be optimized to ensure coordination.

Route 229 (West Street) at Executive Boulevard (North) (Int. No. 131-255)

- Consider upgrading the pedestrian equipment and provide a concurrent walk phase with LPI, if possible.
- Signal revision will be required.

  Response: Noted, LPI were not considered, however, all signals could be further optimized. If intersections designs are selected for further study and design LPI and/or concurrent pedestrian phases will be considered. As this is a planning study

Streetlight Data was used for traffic counts, any design efforts would require manual turning movement counts to be conducted.

Route 229 (West Street) at Executive Boulevard (South) (Int. No. 131-248)

- Consider upgrading the pedestrian equipment and provide a concurrent walk phase with LPI, if possible.
- Signal revision will be required.

Response: Noted, LPI were not considered, however, all signals could be further optimized. If intersections designs are selected for further study and design LPI and/or concurrent pedestrian phases will be considered. As this is a planning study Streetlight Data was used for traffic counts, any design efforts would require manual turning movement counts to be conducted.

Route 229 (West Street) at I-84 Westbound Ramps (Int. No. 131-232)

- No Comments.

Response: Noted, no action necessary.

<u>Francis R. Pickering Comments:</u>

Improvement locations

Location 1

Recommendation: Do <u>not</u> implement the proposed modifications to King Street Extension. Instead, evaluate this intersection – including travel between Route 229 and Jerome Avenue – through a comprehensive study that addresses all travel needs through the area.

The proposed redesign of the 6/229 intersection fails to capture regional/local travel patterns through the intersection or address related deficiencies in the roadway network:

1. The Route 6/Route 229 intersection cannot be studied in isolation. Route 6, Route 229, and Jerome Avenue may technically be separate intersections but functionally operate as one, providing connections in four directions. Study of this intersection must address connections to/from the north (Jerome Avenue, north Bristol, and Burlington) and consider both intersections together. The Report fails to do this and, as a consequence, will not address some of the most serious deficiencies that affect traffic operations in and near the intersection.

    a. Specifically, the report fails to recognize that King Street Extension is not just a cut-through for eastbound traffic on Route 6 turning right onto Route 229; it also functions as a north-south connector for traffic from Jerome Avenue continuing south onto Route 229. The separation of Route 6's intersections 6 with Jerome Avenue and with Route 229 creates create safety issues going south (via the cut-through) *as well as* congestion and safety issues going north. These take the form of long queues at the Route 6 traffic light at the northernmost terminus of Route 229; to beat the light, drivers may queue in the leftmost turning lane and then jockey to get into the rightmost westbound lane on Route 6 to turn right onto Jerome Avenue – in other words, a merge directly after a turn over a short

distance, with high traffic volumes, curb cuts, and confusing/inadequate access control.

Response: Unfortunately, the project limits are with US Route 6 / Farmington Avenue. The Farmington Avenue approaches were left alone as a separate study of the US Route 6 / Farmington Avenue was drafted by others. The CT Route 229 team concerns was the King Street Extension and its operation for local businesses and safety of roadway users. The design was limited by existing gas vaults and ensuring the King Street Extension was not utilized as cut through. The location of US Route 6 / Farmington Avenue between Jerome Avenue and Dallas Avenue clearly is in need of access management in addition of traffic optimization.

2. It is not clear that the proposed redesign will function as expected, that is, prevent eastbound vehicles on Route 6 from continuing to access Route 229 via King Street Extension. What is to stop vehicles from cutting through the gas station entrance?

   Response: Noted, the movement is not fully blocked, however it prevents a fast cut through. The extension under the new design functions as a circulation road serving the surrounding commercial businesses.

3. The report does not address inadequate spacing between King Street Extension and the entrance/exit drives to/from the Pavilion Restaurant on the west side of Route 229. Drivers exiting King Street Extension onto Route 229 south must look over their left shoulder to see oncoming southbound traffic due to the geometry of the intersection; while doing that they are unable to see cars entering or exiting the restaurant. The redesign of King Street Extension does not correct this geometric deficiency and the resulting safety issues.

   Response: The Pavilion Restaurant has two one-way driveways to access/egress the parking lot behind their property. The driveway located closest to the King Street Extension is access only (meaning into the parking lot). Sightlines from the second driveway (egress – out of the parking lot) are sufficient.

4. The report does not address confusion regarding lane use turning from Jerome Avenue left onto Route 6 east. With two southbound, unsigned lanes at the southern terminus of Jerome Avenue, and two eastbound lanes on Route 6, some drivers may expect that to turn right onto King Street Extension or Route 229 south, they should turn left from the right lane on Jerome Avenue. Others may expect that the right lane is for right turns only and may turn left onto the leftmost eastbound lane on Route 6 and then execute a lane change to be in the right lane for a right turn onto King Street Extension/Route 229 south. Confusion about road use can contribute to congestion and safety issues.

Response: Noted, Jerome Avenue is outside of the project limits and was not studied as part of this corridor study.

5. The report does not address lacking access management or traffic control on Route 6 at the intersection with Route 229. On the north side of the intersection are at least three deficiencies: a) a plaza (tenants include Walgreens and Bristol Urgent Care) that requires a tight turn to enter/exit, with no stacking capacity, b) tight spacing between this driveway and the drive to the gas station to the east (Citgo), and c) non-signalized access to the intersection from the station. Similarly, on the southeast corner, access to a drive-thru food outlet (Dunkin) is so close to the intersection as to produce turns across traffic queued at the intersection and congestion.

   Response: Noted, access management was addressed along the CT Route 229 corridor study and did not extend beyond project limits.

6. The report does not observe that the commercial buildings on King Street Extension are underutilized (i.e., substantially vacant). Together with the uncertain future of the gas station (Sunoco) at the corner, this presents an opportunity for bigger thinking about this intersection.

   Response: Noted, the building occupancy and future use of these parcels of land were not considered in the economic market analysis. With the input from the city of Bristol and Town of Southington, a total of 23 sites (over 500 acres) were identified for future growth and development.

Locations 2 and 3

Recommendation: Implement the proposed improvements while maintaining existing speed limits on Route 229.

The proposed improvements are positive developments. However, given the function of Route 229 as a major north-south route, linking major state routes (6, 72, 84, as well as 4 via Jerome Avenue), a reduction of the speed limit from 35 mph to 25/30 mph along this stretch is inappropriate and should not be pursued. Safe pedestrian crossings can be facilitated between the high school and Page Park with improved crossing infrastructure (potentially including lower speed limits in front of the school that are in effect only at the beginning/end of the school day).

Response: Noted, only the northern segment is proposed to reduce the posted speed limit from 35 mph to 30 mph with additional 5mph reduction during the school hours. It should be noted the norther segment, between US Route 6 / Farmington Avenue and Broad Street is narrow segment of CT Route 229, providing only one travel lane in each direction with primary residential land use. On the contrary, the central segment between Broad Street and West Gate Street is posted at 30mph with two through lanes in each direction. With the proposed changes along the northern segment, vehicular traffic should reduce their desired speed. The new posted speed limit will be a continuation of central segment posted speed.

Location 4
Recommendation: Implement the proposed improvements, potentially without Karen Road access.
The intersection of Route 229 with Woodland Street has been problematic. The proposed improvement would be a positive development; however, it is unclear why Karen Road should be preserved but for emergency vehicle access only. An emergency-vehicle only 'porkchop' would not seem to be warranted here. What is the justification for such an unusual design?

> ***Response: Noted, these are just conceptual plans that were developed with the assistance from the town representatives. The emergency access could be removed or kept in the final design, with the input from the public and governing agencies.***

Location 5
Recommendation: Evaluate right-of-way constraints and impacts.
The multi-use trail proposed may be uncomfortably close to Route 229 and to the (relocated) fence for Wilson Field. The concept should be reviewed to determine whether a multi-use trail is feasible here given limited available right of way, as well as whether the relocation of the fence would have adverse impacts on the utility of the playing court.

> ***Response: Noted, a survey and available right of way information will be necessary to make the determination if there is sufficient room for the multi-use trail. Overall, there is an existing: 4-5 ft snow shelf, 5 wide sidewalk, and 7ft wide grass strip, before the tennis court. With the reduced multi-use trail of 7ft and maintained snow shelf with bollard to sperate the vehicular traffic and multi-trail users, roughly, 5 ft of the grass strip would be provided (reduced by 2ft) to provide the multi-trail services. The chain-link fence line would be moved to complete the design.***

Location 6
Recommendation: Implement the proposed improvements but include mention of the removal of the Bristol Brass Dam/river restoration and connection to the Tunxis Trail.
The proposed improvements would be positive developments. Shortening crossing distances will improve both traffic operations and the experience for pedestrians; and a multi-use trail along the Pequabuck River to Memorial Boulevard will provide valuable recreational and natural opportunities. However, the report fails to mention the potential for synergistic projects at this location:

1. The report names the Bristol Brass Dam but does not note that the dam is a priority for removal. (The dam has adverse impacts on the riverine ecosystem, does not serve any purpose, and its removal and associated restoration of the river have been thoroughly studied. Construction funding is the challenge at this point. NB: dam removal is eligible for transportation funding.)

2. Historically, a brownfield was reported to exist on the southern bank of the Pequabuck River east of Downs Street. Remediation may be needed for creation of multi-use trail here.

3. The southern part of the Tunxis Trail, a 79-mile blue-blazed trail, runs from the Wolcott line atop South Mountain north through Southington to Bristol. This trail currently ends at the park and ride lot on Lake Avenue. The multi-use trail proposed from Route 229 to Memorial Boulevard presents an opportunity to extend the trail to the Pequabuck River, improving access from downtown Bristol to a trail of statewide significance. Subsequent extension may be possible over Hurley Hill toward Page Park.

   Response: The Bristol Brass Dam, brownfields, and remediation steps in the general area are provided in the existing conditions section of the report. With limited funding the general area of Pequabuck River, with or without the Bristol Brass Dam, could be a destination spot. The CT Route 229 team selected this area as a design spot location, as it is part of the existing multimodal system with visibly lacking facilities. The Trident area has the highest traffic volumes in the corridor, has the highest crash rates, has transit stops in the vicinity, provides active rail track, and is one of higher destination areas. The trident has the highest volumes in all directions, meaning provides north-south-east-west connectivity on regional level. The concept are for planning purposes and final design could incorporate any of the suggested elements. The team did take into consideration and connectivity to existing trails, bike routes, and proposed facilities by both communities.

Location 7

Recommendation: connect the proposed multi-use trail to Lake Avenue and to the park and ride lot.

The general Route 229 corridor is popular with pedestrians and cyclists, but many if not most eschew Route 229 itself in favor of quieter and more scenic parallel facilities. That the study does not consider this creates a design blind spot that results in proposals for facilities for use that does not exist (e.g., multi-use trail on Route 229) rather than for proposals related to facilities that pedestrians and cyclists already use and may prefer to see enhanced.

Route 229 in Southington has two parallel facilities, current and planned, that can be expected to attract substantially more nonmotorized traffic than a multi-use trail on Route 229. These are:

1. Farmington Canal Heritage Trail (FCHT) to the east. The FCHT is the most popular multi-purpose trail in the state, with over one million visitors annually to several sections. As noted in the Location 8 comments, the FCHT will be extended north from its current terminus at Lazy Lane into Plainville.
2. Lake Boulevard/Mount Vernon Road/Marion Avenue/Mountain Road to the west. This road is extremely popular with pedestrians and cyclists. (See Strava data for an illustration.)

Given these popular, parallel facilities, a new multi-use trail on Route 229 in Southington is of questionable value. (Note this is in reference to a multi-use trail only. Closure of gaps and completion of a sidewalk on Route 229 would be a positive development.) Limited resources would be better spent enhancing the above two corridors and connecting them to the surrounding communities.

With respect to Location 7, this could be achieved by extending the proposed multi-use trail on the west side of Route 229 north of Lake Avenue one block south on Lake Avenue, to Fairview Avenue, with a trail crossing from the Casey Field parking lots to the trail**.** This will:

1. Allow cyclists on Lake Avenue to access the trail and continue to downtown Bristol or north up Route 229 without having to navigate the busy Route 229/Lake Avenue intersection, nor having to bike across pedestrian-oriented crosswalks.
2. Connect the multi-use trail to Casey Field, a sports facility which is popular with children, and allow the parking at Casey Field to be used for trail access.

Response: Noted, Strava data was utilized to assess the existing bike usage in the area. driven by data and the request from the city of Bristol the multi-trail is designed on the left hand side of the CT Route 229 corridor between Riverside Avenue and Lake Avenue. One of the design goals of CT Route 229 multi-trail is to provide additional corridor and connectivity to existing and proposed network.

Location 8

Recommendation: Prioritize completion of the Farmington Canal Heritage Trail, and building connections from it to parallel streets, over building entirely new, separate multi-use trails on those parallel streets. Consider building a multi-use connection from the FCHT to ESPN and Lake Compounce.

The report does not consider the relationship of the Farmington Canal Heritage Trail to the study corridor, aside from noting that it is "in proximity to the Study Area." Extension of the FCHT into northern Southington and Plainville, as proposed by the Gap Closure Study, can be expected to result not only in substantial increases in trail use in Plainville and Southington but also additional pedestrian and bicycle travel to and from the FCHT on cross streets, such as Spring Street and West Queen Street – streets which intersect Route 229 and which have no facilities for and may not be comfortable and/or safe vulnerable users. While provision of a multi-use trail along Route 229 would benefit pedestrians and cyclists in the area, it does not address the need for safe passage to and from the FCHT and should be a lower priority than building of the FCHT and its integration into the street network.

The report should refer to, complement, and integrate with CRCOG's Gap Closure Study. Specifically, the report should prioritize completion of the FCHT and the implementation of one or more pedestrian/cyclist connections west from the FCHT to Route 229. Creation of such connections would serve as the "ribs" to the "spine" of the FCHT. Previous planning efforts in Bristol and Southington identified both ESPN (large on-site workforce, high prominence for active transportation given its status as the world's premier sports network) and Lake Compounce (a major destination for families and children) as potential major generators of nonmotorized traffic. A connection on or approximately parallel to Town Line Road could link the FCHT with ESPN and Lake Compounce.

Response: Noted, the priority of the study was the CT Route 229 corridor. The proposed concepts were complementary of existing and proposed multi-trail networks in the area.

Locations 9 and 10
Recommendation: Implement the improvements as proposed (minus the multi-use trail).
The lack of dedicated turning lanes produce congestion and safety hazards, with cars stopped in the middle of a travel lane. An increase to two through lanes in each direction with turning lanes would dramatically improve traffic flow and reduce crashes. (Personally, every time I stop to turn left from Route 229, I pray I am not rear ended. The current configuration is very uncomfortable.)

Response: Noted, no action needed.

Location 11
Recommendation: Implement the improvements as proposed (minus the multi-use trail), and <u>not</u> one of the alternatives.
The same comments as for Locations 9 and 10 apply here. Additionally, realignment of Spring Street to be across from West Pines Drive will eliminate a dogleg crossing of Route 229, which is hazardous for cyclists. (It is safer to cross a road directly than turn right onto it and then 'hang out' in the middle of the roadway waiting to make a left turn.)
Location 11
Recommendation: Implement the improvements as proposed (minus the multi-use trail) and provide a nonmotorized connection between the two halves of Churchill Street.
The same comments as for Locations 9 and 10 apply here. However, to provide for east-west pedestrian and cyclist connectivity between Mount Vernon Road and Curtiss Street and the FCHT (which Curtiss Street leads to via Lazy Lane), build a sidewalk or trail connection between the eastern and western sections of Churchill Street. The section of Churchill Street that opens on Route 229 ends in a cul-de-sac; the section of Churchill Street that opens on Mount Vernon Road ends in a dead end. These termini are close enough to be visible from each other. Approximately 400 feet of sidewalk or trail (stone dust could be possible) would reunite these two and provide a valuable nonmotorized connection.

Response: Noted, these are just conceptual plans that were developed with the assistance from the town representatives. Additional considerations as outlined could be incorporated in the design.

Additional locations
The report does not appear to propose any improvements to Route 229 near I-84. This is unfortunate, given that this area may be able to be improved:

1. It is challenging and confusing to traverse this area by foot or pedal. (Guide rails in some places come up to the curb, shoulders are narrow, sidewalks are missing, "no pedestrian crossing" signs exist instead of crosswalks. Could sidewalks be added?)

Response: Noted, the project limit prior to overpass limits our knowledge of the area and possible solutions to be considered.

2. The Target/Lowe's plaza has awkward access. (For instance, vehicles exiting from I-84 west on Route 229 must turn right and then left to enter the plaza, even though it is directly across from the offramp. Could a direct-across connection be created?)

   Response: Noted, the Target / Lowe's Plaza connection via Executive Blvd provides a safe access/egress to the commercial properties. A direct access from CT Route 229 would create an additional friction point. A direct access from off ramp is not permitted by CTDOT standards.

Further study of this area may be warranted.

Response: Noted, any location that will receive further funding will likely be studies in more detail to ensure public and governing agencies concerns are addressed.

Wayfinding

Recommendation: Refrain from the installation of any wayfinding. Instead, adopt signage, lighting, and vegetation/landscaping regulations to enhance the corridor.

Route 229 already has many signs for its commercial plazas and uses. The gateway and wayfinding signs the report proposes will add to this clutter, likely detracting from (rather than enhancing) the aesthetics of the corridor, and represent an inappropriate design choice, given that:

1. Land uses along Route 229 are expected to continue to be auto-centric.
2. Pedestrian traffic is expected to remain low. (This is not a downtown, town center, or village.)
3. Wayfinding signs are unlikely to be legible at typical automobile traffic speeds on the corridor.

Response: Noted, limiting signing was suggested. These proposed concepts are at the discretion of the two communities.

Accordingly, any proposal for wayfinding signs should be eliminated. Instead, the report should suggest that Bristol and Southington consider adopting local regulations or ordinances that support the orderly development of the corridor. These may include: requirements for:

1. Appropriate landscaping (vegetative buffers and trees) to frame the roadway and to provide shade to pedestrians and buffer them from vehicular traffic, as well as to mitigate summer heat.
2. Signage and lighting that avoids visual clutter, glare, and light trespass and protects dark skies.

Response: Acknowledged.